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THIRD ANNUAL REPORT

OF THE

DEPARTMENT OF PUBLIC HEALTH

July 1, 1919

TO

June 30, 1920



DR. C. ST. CLAIR DRAKE, Director

[Reprinted from the Third Administrative Report. Printed by authority of the State of Illinois.]



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LETTER OF TRANSMITTAL

To the Governor:

In compliance with the provisions of the Civil Administrative Code, I have the honor to submit to you the accompanying report of the Department of Public Health for the fiscal year, July 1, 1919, to June 30, 1920. The report covers briefly the activities of the various divisions of the department during the fiscal period.

Respectfully submitted,

C. ST. CLAIR DRAKE, M. D.

STATE OF ILLINOIS
THE DEPARTMENT OF PUBLIC HEALTH

C. ST. CLAIR DRAKE, M. D., *Director*

GEORGE T. PALMER, M. D., *Assistant Director*

DIVISION OF COMMUNICABLE DISEASES

JOHN J. MCSHANE, M. D., DR. P. H., *Chief*

DIVISION OF TUBERCULOSIS

GEORGE T. PALMER, M. D., *Acting Chief*

DIVISION OF SANITATION

PAUL HANSEN, *Chief Sanitary Engineer*¹

HARRY F. FERGUSON, *Acting Chief Engineer*

DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar of Vital Statistics*

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

C. W. EAST, M. D., *Acting Chief*

DIVISION OF SURVEYS AND RURAL HYGIENE

PAUL L. SKOOG, *Supervisor of Surveys*²

BAXTER K. RICHARDSON, *Acting Supervisor*

DIVISION OF DIAGNOSTIC LABORATORIES

THOMAS G. HULL, PH. D., M. S., *Chief Bacteriologist*

DIVISION OF HOTEL AND LODGING HOUSE INSPECTION

W. W. McCULLOUGH, *Superintendent*

DIVISION OF PUBLIC HEALTH INSTRUCTION

SAMUEL W. KESSINGER, *Acting Chief*

DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D., *Chief*

¹ Resigned—May 15, 1920.

² Resigned—January 1, 1920.

THE DEPARTMENT OF PUBLIC HEALTH

C. ST. CLAIR DRAKE, M. D., *Director*

During the fiscal year, July 1, 1919, to June 30, 1920, the State Department of Public Health has become firmly established on a post-war basis. During the two previous fiscal years, matters having to do with the protection of the military population in the several camps and cantonments located in Illinois, the policing of zones surrounding these cantonments and other activities intimately associated with the war engaged a large part of the attention of the various divisions of the department. During these two previous years the personnel of the department, particularly those engaged in the more technical branches, was seriously disturbed on account of the fact that many of the department's technicians engaged in military service. During the past fiscal year the old-time personnel has been reestablished, and work has progressed on a peace-time basis.

In one particular, however, the influence of the war has been definitely felt during that year. Scales of salaries of every kind have been higher than at any time in the history of the department, and it has been found impossible to fill satisfactorily a number of positions created by the Fifty-first General Assembly at the salaries which seemed adequate at the time of the preparation of the biennial budget. For the same reason, there has been constant temptation for the older employees to give up positions in public service and to accept more lucrative positions outside.

The cost of travel, including railroad fares, sleeping car accommodations, hotels and all other factors, continued to increase steadily after the termination of the war, so that appropriations made during the session of the General Assembly early in 1919, which at that time appeared reasonably generous, have proven to be entirely inadequate, necessitating the curtailment of many activities of a progressive type which would have been very desirable.

This increase in costs has extended through every phase of government and, as these pages are written, in July, 1920, shows no tendency toward abatement.

This shrinkage in the productive worth of money has not necessitated the curtailment of any necessary activities, but has rendered impossible the progressive steps contemplated at the beginning of the biennium.

In the main, the general activities of the department during the past fiscal year have been directed upon the following lines:

(a) The completion of the organization of the department under the provisions of the Civil Administrative Code, and the re-establishment of personnel;

(b) The completion of agreements between the department and the various extra-governmental health agencies to prevent overlapping and duplication of effort and to secure complete coordination in all forms of health activity throughout Illinois;

(c) The development of a closer relationship between the department and the local health authorities throughout the State, based on a policy of maximum "home rule" in all of the various communities;

(d) The standardization of rules and regulations for the control of communicable diseases and the encouragement of the adoption of uniform sanitary and health ordinances and codes throughout the cities and villages of the State;

(e) The improvement in the methods of registration of vital statistics with the establishment of a better understanding between State, county and local registrars, with special educational activity to improve the registration of births so that the State may be recognized as a complete registration State;

(f) Meeting and combatting the influenza-pneumonia epidemic of the winter of 1919-1920;

(g) The development of new health activities proven desirable by war-time experience and by the experiences of other State health organizations.

I. DEVELOPMENT OF DEPARTMENTAL ORGANIZATION

During the fiscal year the Department of Public Health carried out its activities through the following twelve divisions:

Executive Division;

Division of Communicable Diseases;

Division of Tuberculosis;

Division of Sanitation;

Division of Vital Statistics;

Division of Child Hygiene and Public Health Nursing;

Division of Diagnostic Laboratories;

Division of Biological and Research Laboratories;

Division of Surveys and Rural Sanitation;

Division of Public Health Instruction;

Division of Social Hygiene;

Division of Lodging House Inspection.

In the experiences of the past three years, since the adoption of the Civil Administrative Code, this form of departmental organization has

proven entirely satisfactory. Several of these divisions—those carrying out the basic or fundamental activities of the department—have been completely organized and have had a reasonably adequate personnel. On account of the limited appropriations made by the last General Assembly, however, and the necessity for unusual economy due to the excessive cost of government, several of the divisions have remained in more or less skeleton form, their functions, however, being performed with reasonable efficiency either by their limited staffs or through cooperation with other divisions.

It is to be hoped that the Fifty-second General Assembly will see the wisdom of making appropriations adequate to establish all of these twelve divisions on a permanent basis.

II. COOPERATION OF GOVERNMENTAL AGENCIES

At the termination of the war a number of powerful volunteer organizations found themselves with large personnel and large resources, but without a definite future program. For a time it appeared that an unnecessary number of extra-governmental agencies proposed to engage in peace-time health work of one kind or another. As executive officer for the national organization of state health authorities, the Director of the Department of Health was instrumental in bringing about nation-wide agreements between the state health authorities, the American Red Cross, the National Tuberculosis Association and the National Organization for Public Health Nursing, and a clearer understanding between state health authorities and the American Public Health Association and the American Medical Association. These nation-wide agreements provided for definite cooperation between the Departments of Public Health of the individual states, and the state divisions of the national extra-governmental organizations.

During the past year the close cooperation between the Illinois Tuberculosis Association and the State Department of Health, which has prevailed in the past, has been continued with most satisfactory results and definite working agreements, particularly in the supervision of public health nursing, have been entered into between the Department of Health, the Illinois Tuberculosis Association and the Central Division of the American Red Cross in which the standards of nursing service of the National Organization for Public Health Nursing have been adopted for application to both governmental and extra-governmental nursing agencies.

With the passage of a reasonable amount of time necessary to readjustment, it is believed that all of the extra-governmental agencies desiring to do so may engage in local and state-wide health activity, but that there will no longer be the expensive duplication of effort, friction and controversy which a few months ago appeared to be inevitable.

In all of the agreements for cooperation between the state-wide governmental and extra-governmental agencies, the State Department

of Health has been recognized as a proper place of contact and as the proper coordinating agency, but a distinct effort has been made by the department to accord to the extra-governmental or volunteer agencies all of the freedom, initiative, latitude and authority consistent with the provisions of the Civil Administrative Code, and of other State laws.

It is to be hoped that this form of cooperation may be adopted locally in all of the cities and communities of the State, the local health department being the coordinating agency for all of the local health activities. This desired end cannot be accomplished, however, until all of the health jurisdictions in the State are efficiently organized with competent and responsible heads. It must be admitted with considerable regret that there are still many communities in the State where the local health departments are so inadequate, so poorly financed and so inefficiently directed, that it is impossible to induce the local extra-governmental agencies, some of which are strong and influential, to recognize or accept the leadership of the local health department.

III. COOPERATION OF LOCAL HEALTH AUTHORITIES

During the past year the department has made a continuous and constant effort to establish the closest cooperation with local health authorities throughout the State. In extending its influence into the local communities, it has been made clear that it is the policy of the department to serve in an advisory and standardizing capacity and in no sense as a dictator of the details of local health organization or administration. It is believed that the adoption and promulgation of this policy has gone far toward establishing a closer relationship between local and State health authorities and will be more effective in the stimulation of efficient local health administration than any policy contemplating extension of power and authority by the State Department of Health in local affairs.

IV. STANDARDIZATION OF RULES AND REGULATIONS

During the year, there has been a complete revision of all rules and regulations for the control of communicable diseases in harmony with prevailing scientific practice, and there has been a continuous effort to stimulate the adoption of local ordinances and health codes in harmony with these revised rules and regulations.

In many instances the department has furnished to municipalities model health codes through the adoption of which there will be uniformity of action in health matters in all parts of the State.

V. IMPROVED VITAL STATISTICS

For many years Illinois remained one of the few major states in the Union unrecognized by the Federal Bureau of the Census as a registration State in vital statistics. On October 14, 1918, the Bureau of the Census recognized Illinois as a registration State for deaths, but up to

this time the reports of births have not been sufficiently complete to justify the Federal Government in the complete recognition of Illinois as a registration State.

During the past year every possible effort has been made to interest the medical profession, health authorities, civic organizations and the public as a whole, in the necessity for complete birth registration, with the result that the returns have materially improved. It is hoped that during the coming fiscal year birth reports will be sufficiently complete to warrant acceptance of Illinois in the registration area for both deaths and births.

Under the plan of birth and death registration effective in Illinois, it is contemplated that there shall be complete records in the hands of the State, county and local authorities. During the past year a method of cross checking has been adopted which for the first time guarantees the proper carrying out of this plan so that at the present time the birth and death records in the hands of local health authorities, county clerks and the State Department of Health, are complete for their several jurisdictions.

VI. INFLUENZA-PNEUMONIA EPIDEMIC 1919-1920

All of the resources of the department were thrown into the influenza epidemic, beginning late in 1919 and extending into the spring of 1920. This epidemic, while not as devastating and paralyzing as the epidemic of the previous year, was exceedingly serious in character. It is believed that the better facilities of the Department of Public Health and the preparation brought about in local communities at the instance of the department, saved many human lives and prevented a vast amount of human suffering, if they were not responsible for the decreased ravages as compared with the previous year.

VII. NEW HEALTH ACTIVITIES

Our experience in the World War and in the influenza-pneumonia epidemic of 1918-1919, indicated the need for a number of new health activities which had not been considered essential in years past. These new activities are dealt with in detail in the following pages, but may be briefly summarized as including improved methods in the handling of communicable diseases with an entirely new attitude toward influenza and pneumonia; new activities in the prevention and suppression of venereal diseases; the more general employment of public health nurses, both in local and State activities; the extension of diagnostic clinical service in cooperation with the medical profession; the more extensive production of preventive and curative vaccines, sera and other biological products; the establishment of a more intimate contact with the medical profession of various communities through the appointment of assistant collaborating epidemiologists in all of the counties of the State.

EXECUTIVE DIVISION

The Executive Division of the State Department of Public Health is made up of the director, assistant director, the chief clerk and a staff of accountants and clerks having to do with the coordination and general supervision of all of the activities of the several divisions. To this division the chiefs of all of the divisions make regular reports and in it general programs are outlined and the operation of the several divisions coordinated. The Executive Division is also the point of contact between the department and other State departments or offices, and the means of contact with all outside governmental and extra-governmental agencies.

In addition to the general executive supervision of the department carried out by the director, through this division, together with accounting, provision of supplies and other general activities, the director has given a large share of his time during the past fiscal year to the coordination of governmental and extra-governmental agencies on a nationwide basis.

The chief activities of the division may be generally classified : (a) placing the department on a post-war basis; (b) the development of cooperation between governmental and extra-governmental agencies; (c) special investigations including a study of invasion and prevention of bubonic plague; (d) the development of closer cooperation with the medical profession of the various counties of the State, through the State and county cooperating health service and the appointment of assistant epidemiologists in all counties; (e) general educational activities in conjunction with the Division of Public Health Instruction and (f) the expansion of diagnostic and clinical service.

The Executive Division has had to deal with the intricate problems of financing the department with appropriations made by the Fifty-first General Assembly which did not contemplate the radical increase in the cost of government. For the most part, the personnel of the various divisions has been reestablished on practically the same basis prevailing with the advent of the war, but a number of valuable employees have found it necessary to sever their relationship with the department because the department has found it impossible to meet the competitive financial offers of outside organizations. On the whole, however, all divisions have been efficiently manned and with a few exceptions, all of the contemplated activities of the department have been in operation.

With the termination of the war, it became imperative to coordinate and bring closely together the activities of the several strong and influential volunteer health organizations of national scope, and to bring these extra-governmental organizations in close contact with duly authorized governmental organizations.

To this end the director of the department, who has served also as the executive officer for the national organization of state health officials, has devoted much of his time in conference with the executive heads of national health organizations, these conferences resulting in agreements which will prove beneficial, not only to public health work in Illinois, but to that of the entire Nation. The assistant director of the department has served as chairman of a committee of the Executive Committee of the National Tuberculosis Association, charged with the responsibility of working out a plan of cooperation with other health organizations and has also served as president of the Illinois Tuberculosis Association authorized to represent that organization in bringing about a cooperative health program within the State.

The principal agreements resulting from numerous conferences, held for the most part in the city of Washington, are as follows: A memorandum of policy of cooperation between the state health authorities and the National Tuberculosis Association, as amended December 1, 1919; a suggestion of principles for the cooperation of the Red Cross with the state department of health and other agencies in the field of public health nursing, with amendments approved by the executive committee of the Conference of State and Provincial Health Authorities, July 29 and October 25, 1919; an agreement between the American Red Cross, the National Tuberculosis Association, and the National Organization for Public Health Nursing, for the promotion of public health nursing, and a suggested plan for cooperation between the Red Cross, the State Tuberculosis Association in states in which there is no Bureau of Public Health Nursing, and no state supervising nurse within the state department of health; a memorandum of policy of public health nursing service maintained by governmental and extra-governmental agencies, approved by the State Department of Health, the Central Division of the American Red Cross and the Illinois Tuberculosis Association.

As a result of these agreements, the conditions surrounding the activities of extra-governmental agencies which were all but chaotic, have now been brought into reasonable order and there is every reason to anticipate that the state health departments of the several states of the Nation will receive from these powerful extra-governmental agencies a satisfactory measure of assistance and support and that the state health departments will, on their part, be enabled to strengthen greatly these extra-governmental agencies, and that a more helpful spirit of cooperation may be created between the volunteer agencies themselves.

While, for the most part, the agreements entered into by organizations of national scope have dealt with general principles rather than with actual procedure, the agreement relative to public nursing service applicable to Illinois and entered into between the State Department of Health, the Central Division of the American Red Cross and the Illinois Tuberculosis Association, and based upon national agreements, is illustrative of the beneficial results to be expected from these national plans and programs.

Under the provisions of the Illinois nursing agreement, the State Department of Health is recognized as the central and coordinating head of nursing service, and the department is obliged to employ a supervising nurse who shall have jurisdiction over all publicly or privately employed public health or community nurses in the State. Associated with this State supervising nurse will be an assistant supervisor for the American Red Cross and an assistant supervisor for the Illinois Tuberculosis Association, the salaries of whom may be paid in whole or in part by the interested extra-governmental agencies. These three nurses will constitute a supervisory body dealing with nursing service throughout the State, the official actions of this body being subject to review, approval or disapproval by a standing committee consisting of an active representative of the State Department of Health, of the Central Division of the American Red Cross and of the Illinois Tuberculosis Association.

Under the provisions of this contract or memorandum of agreement no agency may establish nursing service in any community in which another organization already maintains nursing service, or has such service in contemplation, without conferring with and securing approval of the State Department of Health and other interested agencies. It is further agreed that the policy of any participating organization will be to support and encourage any existing nursing service, rather than to attempt to supplant or parallel it.

While this agreement is not yet in complete operation, owing to unavoidable delays and difficulties in completing the supervisory personnel, there has already come about a much closer understanding, particularly between the Illinois Tuberculosis Association and the American Red Cross in the matter of establishing nursing service.

For a period of over ten years the Illinois Tuberculosis Association has been the principal agency in Illinois engaged in establishing local nursing services, there being at this time about sixty such services in as many communities in the State. The American Red Cross, for a number of years, has maintained a town and country nursing service and with the termination of the war it was found that many communities had Red Cross funds which could be employed for the establishment of this popular and valuable form of health activity. On the other hand, a large number of communities throughout the State had been gradually

accumulating funds from the annual sale of Red Cross Christmas Seals, with the ultimate aim of employing nurses. With the growing appreciation of the value of public health nurses in all modern health work, and the stimulation to public nursing service given by our experience in the war and in the recent influenza-pneumonia epidemic, a condition arose which gave promise of becoming well nigh chaotic and of creating bitter competition and rivalry between the Red Cross Chapters and the tuberculosis associations of the several counties, towns and cities. Up to this time public nursing service has been subject only to the supervision maintained by the interested volunteer organization. The advantage of some form of State supervision maintained with a fair spirit of cooperation and with the assistance of the extra-governmental agencies appears obvious, theoretically, and is demonstrated to be more than satisfactory in actual application.

It is the profound conviction of the Director of the State Department of Health that a cooperative program, based upon the agreements of national associations entered into during the past year, will result in a much higher measure of efficiency throughout the State than has ever prevailed in the past. The governmental health organization cannot afford to ignore the influence and prestige and especially the interest and enthusiasm of extra-governmental organizations, and yet these extra-governmental organizations cannot accomplish their maximum of useful service unless their programs are intimately aligned with governmental health activities.

During the year just passed, bubonic plague appeared in a number of sea coast communities on the Gulf coast and on the Pacific coast. In California, the invasion of this disease appeared menacing since it was found that the disease was no longer confined to rats, but had extended to other rodents, causing it to be far more difficult to control.

The spread of bubonic plague, through invasion of rodents, is not limited geographically as was the spread of yellow fever, and consequently there was occasion for grave concern on the part of every state health authority lest bubonic plague should become one of the serious health problems of the Nation. It was quite within the range of possibility that infected rodents could be carried by steam boats or by rail from the Gulf coast, and the disease thereby be introduced into Illinois. The Director, in response to an invitation extended by the Surgeon General of the United States Public Health Service, joined a group of other state health authorities in cities on the Gulf coast, and conferred with Federal and state health authorities as to the approved means of the extermination of other rodents in case such a procedure became imperative.

Provisions have been made for a study of rats in Illinois River towns and particularly those which may be found in cargoes of steamers from the southern Mississippi River.

While unlimited mandatory power may be conferred upon the State Department of Health by the statutes, and while practically unlimited power is conferred upon the Department of Health by the Civil Administrative Code, it is recognized by State health authorities that for the attainment of the maximum of service, there must be a thoroughgoing cooperation on the part of the medical profession.

Some time ago there was created by the State Department of Health a State and county cooperating health service, whereby there was appointed in each county, on the nomination of the county medical society, a thoroughly competent physician who should serve as a representative of the State Department of Health, and who in time of emergency should be engaged in active service on a *per diem* basis. It was a duty of this county representative of the State Department of Health not only to keep the department advised of any important health or sanitary conditions developing in his territory, but also to keep his local medical society fully informed as to any new steps taken in the development of sanitary science.

This service has proved of very great value and is capable of much more extensive development. Representatives in the several counties have been designated assistant collaborating epidemiologists, bringing them in close touch not only with the State health service, but with the activities of the United States Public Health Service, and utilizing the franking privileges of the Federal Government at a considerable saving of State funds.

As one of the progressive movements in modern preventive medicine, the State Department of Health has encouraged the establishment of clinics in various parts of the State, always in cooperation with the local medical profession, and designed primarily for diagnostic purposes. This service for the most part has had the warm support of the members of the medical profession and portable or permanent clinics for crippled children, for victims of venereal diseases and of tuberculosis have been introduced in all parts of the State.

The Executive Division has also been deeply interested in the promotion of child welfare activities throughout Illinois. The annual Better Babies Conference held in connection with the Illinois State Fair, has grown phenomenally and has extended its influence to all parts of the State, causing the establishment of well babies' conferences, baby health centers and systematic physical examination of babies and young children. It is doubtful if there is any single feature in the activities of the State Department of Health productive of a more direct and higher degree of benefit than these child welfare activities, appealing as they do to the public sentiment and sympathy. It is recognized as a fundamental fact in all public health work that the control of the living conditions of children must be the forerunner of all constructive health administration.

It is believed that within the past year unprejudiced representatives of health organizations of national scope have come to recognize a greatly improved health service within the State of Illinois. With the rapid changes brought about through our lessons learned during the war, many activities have been initiated which in the past would have been regarded as rather extreme and revolutionary. The new importance which public health came to assume, however, during the war, and the policy of leadership without dictation, which has been adopted consistently by the department, have had much to do with influencing the acceptance of these new programs and with gaining for them the thoroughgoing co-operation and support of the general public and of the medical profession.

DIVISION OF COMMUNICABLE DISEASES

JOHN J. McSHANE, M. D., DR. P. H., *Chief*

The Division of Communicable Diseases, although handicapped to some extent during the past year by numerous changes in both the field and office forces, has accomplished a great deal in the matter of securing reports of communicable diseases throughout the State, and in the control of epidemics.

The records of the division show that during the fiscal year ending June 30, 1920, there were reported 340,514 cases of communicable diseases, as compared with 353,299 cases for the year ending June 30, 1919. Of these 340,514 cases, 170,954 were influenza, the number of influenza cases reported being 33,188 less than for the previous year.

INFLUENZA

During the past two years, two very destructive influenza epidemics have visited this country, the first in the fall of 1918 and the second during the winter of 1919-1920.

Many of our sanitarians and epidemiologists in America state that there was a mild outbreak of influenza during the spring and winter months of 1918, increasing in virulence in August of the same year. From the history of influenza in the camps, some 40,000 cases were reported in 1917 and statistics gathered from these camps show that there was a high incidence of pneumonia late in the winter of that year and the spring months of the following year. It has been disputed as to whether the first cases appearing around Boston the first week in September, 1918, were imported from abroad or whether influenza, already in existence in this country, had merely taken on an acquired virulence. Estimates place the number of deaths from influenza and pneumonia in 1918 throughout the world from six to ten millions, by far a greater total of lives lost through the epidemic than the entire loss of all the belligerent forces during the war. It is quite striking that the first reports of influenza occurring in Illinois should have come from the Great Lakes Naval Training Station in both epidemics. Shortly after receiving reports of the outbreak of influenza at Great Lakes—about January 12, 1920—reports of the appearance of the disease began to come into the State Department of Public Health from other cities and villages along the north shore and from a number of points in northern Illinois, especially from Camp Grant and Rockford.

Like the epidemic in 1918, the disease spread southward over the State, following the large trunk lines of travel, the southern portion of

the State being the last to be affected. One notable feature of the recent epidemic was that the cases of influenza, as a general rule, were not so severe and there were far less complications than in the previous epidemic, although, from reports received by the department, there were nearly as many cases as during the epidemic of 1918. Statistics, which will be given later on, showing the morbidity and mortality in a given number of cities in the State, will prove the foregoing statement. That a large number of mild cases were called "grippe" and not reported is probably accountable for the decrease in the number of reported cases. Had all cases of "grippe" been reported, in accordance with the rules of the State Department of Health, there would, no doubt, have been many more cases recorded.

In Chicago, for a period of seven weeks—from September 22 to November 9, 1918—there were 37,186 cases of influenza and 17,080 cases of pneumonia reported. For the seven-week period, from January 10 to February 28, 1920, there were reported 28,738 cases of influenza with 8,051 cases of pneumonia. For the seven-week period in 1918, there were 7,943 deaths from pneumonia and influenza, while, for the same period during 1920, there were 3,602 deaths.

TABLE I—CITY OF CHICAGO—AN ANALYSIS OF MORTALITY AND MORBIDITY RECORDS FOR TWO INFLUENZA EPIDEMIC PERIODS—SEPTEMBER 22 TO NOVEMBER 9, 1918 AND JANUARY 10 TO FEBRUARY 28, 1920.

	Two epidemic periods —7 weeks each.	
	Sept 22— Nov. 9, 1918.	Jan. 10— Feb. 28, 1920.
MORTALITY DATA.		
Influenza deaths reported.....	5,044	1,800
Pneumonia deaths reported.....	2,899	1,802
Total influenza and pneumonia deaths.....	7,943	3,602
Normal pneumonia and influenza deaths for period.....	380	978
Excess pneumonia and influenza deaths above normal.....	7,563	2,624
Per cent excess pneumonia and influenza deaths above normal.....	1,980. %	269. %
Death rate, influenza-pneumonia for the epidemic period per 100,000 of population.....	305.9	137.4
Normal death rate, influenza-pneumonia, for epidemic period.....	14.5	37.3
Per cent excess of 1918 epidemic death rate, influenza-pneumonia, over that of 1920 period.....	122.6%	9.8
Deaths, per 100 reported cases.....	14.5	
All causes—deaths from—		
Total, all causes, epidemic period.....	12,787	8,765
Normal, all causes, for this period.....	4,365	5,647
Excess deaths, all causes, epidemic period.....	8,422	3,118
Per cent excess deaths from all causes.....	192.9%	55.2%
MORBIDITY DATA.		
Influenza cases reported.....	37,186	28,738
Pneumonia cases reported.....	17,080	8,051
Ratio reported pneumonia cases to reported influenza cases.....	45.9%	28.0%
Influenza and pneumonia cases reported per 100,000 of population.....	2,098	1,403
Per cent excess reported cases, 1918.....	48.7%	

The cities shown in Table I have an aggregate population of 3,328,622, or approximately one-half the population of the entire State. The influenza mortality in these cities during the recent epidemic totalled 4,653, or 136.8 for each 100,000 of the aggregate population. Assuming that a similar death rate prevailed throughout the State, the mortality for the seven weeks of the recent epidemic would reach a total of approximately 8,600. In 1918, the mortality was about 18,000 for the same period of time, showing the death rate for the 1920 epidemic to be about one-half that of the epidemic in 1918. The average influenza mortality rate for the nineteen cities listed was 130.5. The cities listed in Tables II and III have an excessively high death rate. These tables also give the influenza-pneumonia case reports and ratio of deaths to reports, the cities being rated and listed in the order of the highest ratio. Analyzing these reports, one concludes the high ratio of deaths to cases in the cities of Springfield, Aurora and Moline must be attributed to one or more of three causes, viz: (a) greater laxity of reporting cases, (b) greater severity of infection, (c) less intelligent handling of the cases. Doubtless the first is the real cause.

TABLE II—MORTALITY RECORDS—PRINCIPAL ILLINOIS CITIES—INFLUENZA EPIDEMIC PERIOD, JANUARY 10 TO FEBRUARY 28, 1920—DEATH RATES PER 100,000 OF POPULATION—CITIES ARRANGED IN ORDER OF HIGHEST DEATH RATES FROM ALL CAUSES.

Cities.	Deaths reported Jan. 10-Feb. 28, 1920.				Death rates per 100,000 of population.			Per cent deaths due to in- fluenza and pneumonia.
	All causes.	Influenza.	Pneumonia.	Total influenza and pneumonia.	All causes.	Influenza and pneumonia.	Rank in high influenza and pneumonia rate.	
Aurora.....	185	3	76	79	518.2	221.5	1	42.7
Oak Park.....	121	3	41	44	409.3	148.8	6	36.4
Galesburg.....	100	3	38	41	397.5	162.9	3	41.0
Evanston.....	114	—	—	41	377.7	135.8	11	35.9
Decatur.....	167	18	58	76	377.3	171.7	2	45.5
Peoria.....	265	6	112	118	367.1	163.4	4	44.5
Springfield.....	222	—	—	80	342.2	123.3	13	36.0
Moline.....	99	2	31	33	341.7	113.8	15	33.3
LaSalle.....	84	34	4	38	336.0	152.0	5	45.2
Oglesby.....								
Peru.....	8,765	1,800	1,802	3,602	334.3	137.4	10	41.4
Chicago.....								
Bloomington.....	99	6	38	44	333.8	148.3	7	44.4
Danville.....	120	10	35	45	305.9	137.6	9	37.5
Quincy.....	112	8	31	39	303.7	105.8	17	34.8
East St. Louis.....	227	28	48	76	302.6	101.3	18	33.5
Rock Island.....	97	1	30	31	297.9	95.2	19	30.9
Rockford.....	219	17	94	111	292.0	148.0	8	50.7
Alton.....	86	29	11	40	286.3	133.2	12	46.5
Belleville.....	60	—	—	20	283.5	94.5	20	33.3
Waukegan.....	60	9	17	26	273.6	118.6	14	43.3
Elgin.....	78	5	27	32	268.0	109.9	16	41.0
Joliet.....	61	7	30	37	155.0	94.0	21	60.6
For the 21 cities.....	11,341	—	—	4,653	333.5	136.8	—	41.0

TABLE III—MORBIDITY RECORDS—PRINCIPAL ILLINOIS CITIES—FOR THE INFLUENZA EPIDEMIC PERIOD JANUARY 10-FEBRUARY 28, 1920—CITIES ARRANGED IN ORDER OF HIGHEST PROPORTION OF DEATHS TO REPORTED CASES.

Cities.	Population.	Cases reported.		Deaths. Influenza and pneumonia per 1,000 of population.	Cases. Influenza and pneumonia per 1,000 of population.	Approximate date of onset of outbreak.
		Influenza and LaGrippe.	Pneumonia (all forms).			
Springfield.....	64,877	236	26	30.6	4.04	Jan. 15
Aurora.....	35,681	249	98	23.5	9.44	Jan. 14
Galesburg.....	25,155	252	24	14.9	10.97	Jan. 19
Peoria.....	72,184	774	94	13.6	12.02	Jan. 21
Belleville.....	21,161	165	7	11.5	8.13	Jan. 22
Moline.....	28,976	268	24	11.3	13.53	Jan. 21
Bloomington.....	29,663	422	10.4	14.23	Jan. 15	
Joliet.....	39,353	210	156	10.1	9.30	Jan. 5
Chicago.....	2,621,419	28,738	8,051	9.8	14.03	Jan. 13
Waukegan.....	21,925	271	19	8.9	13.22	
Oak Park.....	29,562	439	68	8.7	17.14	Jan. 11
Elgin.....	29,100	317	55	8.6	12.78	Jan. 7
Quincy.....	36,883	487	34	7.5	14.13	Jan. 26
East St. Louis.....	75,000	1,074	7	7.0	14.41	Jan. 19
Evanston.....	30,178	571	19	6.9	19.55	Jan. 7
Rock Island.....	32,561	487	85	5.4	17.56	Jan. 20
Decatur.....	44,261	1,371	60	5.3	32.3	Jan. 15
Danville.....	32,696	800	70	5.2	26.61	Jan. 20
LaSalle.....						
Oglesby.....	25,000	733	52	4.8	31.40	Jan. 22
Peru.....						
Alton.....	30,036	801	48	4.7	28.26	Jan. 12
Rockford.....	75,000	2,971	248	3.4	42.92	Jan. 15
For the 21 cities.....	3,400,671	41,636	9,235	9.1	14.9	

TABLE IV—CITY OF CHICAGO—TABULATION OF INFLUENZA BY AGES—JANUARY, 1920.

Age.	Male.	Female.	Unknown.	Total.
1.....	156	126	47	339
2.....	207	193	54	454
3.....	186	215	32	433
4.....	172	177	24	373
5.....	178	210	20	408
6.....	193	181	20	394
7.....	140	122	20	282
8.....	97	131	14	242
9.....	87	79	7	173
10.....	79	66	11	156
11.....	87	69	2	156
12.....	81	80	5	166
13.....	48	56	3	107
14.....	81	82	4	167
15.....	65	71	6	142
16.....	89	89	5	183
17.....	75	116	7	198
18.....	87	166	8	261
19.....	93	148	2	243
20.....	170	230	9	409
21-25.....	922	1,722	18	2,663
26-35.....	2,157	2,586	62	4,825
36-45.....	1,181	1,371	48	2,600
46-55.....	510	784	33	1,327
56-65.....	190	383	11	564
66-75.....	107	118	6	231
76-85.....	24	54	1	79
Over 85.....	6	14	-----	20
Unknown.....	1,028	2,126	-----	4,054
Total.....	9,396	11,765	459	21,660
Number of cases age and sex not given.....	-----	-----	-----	963
Grand total.....	-----	-----	-----	22,623

TABLE V—AGE AND SEX DISTRIBUTION—CASES OF INFLUENZA REPORTED IN CITY OF CHICAGO DURING JANUARY, 1920—DATA SUPPLIED BY THE COMMISSIONER OF HEALTH OF CHICAGO, DR. JOHN DILL ROBERTSON.

Ages.	Cases.	Per cent of total cases.
5 years and under.....	1,997	11.3
6-10 years.....	1,247	7.1
11-15 years.....	740	4.2
16-20 years.....	1,294	7.4
21-25 years.....	2,662	15.1
26-35 years.....	4,825	27.4
36-45 years.....	2,600	14.8
46-55 years.....	1,327	7.5
56-65 years.....	584	3.3
66-75 years.....	231	1.3
76-85 years.....	79	0.5
Over 85 years.....	20	0.1
Total cases in which age given.....	17,606	100.

Sex.	Cases.	Per cent.
Males.....	9,396	44.4
Females.....	11,765	55.6
Total in which sex given.....	21,161	100.

Reports of cases were much more complete in the smaller cities and rural sections than in the cities having more than 20,000 population. Nineteen cities having approximately one-half the population of the State reported only one-third of the total number of cases. The city of Aurora, in which only 249 cases were reported, had at a most conservative estimate more than 4,000 cases of the disease. A similar lack of attention to reporting prevailed in the city of Springfield.

CAUSE OF DISEASE

The etiology of influenza is still in doubt. It is impossible to say whether or not the Pfeiffer's bacillus is the cause of this disease; nevertheless many workers still hold that, from studies recently made, Pfeiffer's bacillus must be considered the most likely cause of influenza. Claims have been made by the British that the disease is due to a filterable virus, and extensive experimentation in this direction is in progress in a number of laboratories. Experiments by Parker and by Huntoon and Hannum have demonstrated the fact that the production of a toxin by this bacillus would explain the profound systemic manifestations that accompany a relatively mild local infection.

Early in the epidemic, many bacteriological laboratories produced vaccines for the prevention of influenza. The New York City Health Department prepared and distributed a vaccine prepared from Pfeiffer's bacillus. Most of those produced by other laboratories were mixed vaccines containing the bacillus Pfeiffer, streptococci, staphylococci and a number of strains of pneumococci. Studies made under control con-

ditions have proved that the vaccines did not prevent influenza, as those who had received the inoculations suffered from the disease in about the same proportion as the unvaccinated. It has been claimed by some that, to a certain extent, vaccines prevented complications. During the epidemic of 1920, a number of studies were made by different sanitarians and bacteriologists relative to the efficacy of a mixed vaccine and about the same results were obtained as in the previous epidemic.

In the prevention of epidemics of influenza, Dr. Flexner points out that influenza is endemic in certain parts of eastern Europe. He fixes the habitat on the border between eastern Russia and Turkestan. He says, "There are excellent reasons for regarding the home of influenza as eastern Europe. Many recorded epidemics have been shown more or less clearly to emanate from that area while epidemics of recent history have been traced there with a high degree of conclusiveness." Dr. Flexner thinks the ideal method of combatting this disease would be to eradicate it in the localities where it is endemic; but, to quote Dr. John S. Billings: "Such a method of attack, while logical, is not at the present time practical because of the expense involved and the low standard of national intelligence and lack of appreciation of public health on the part of the countries where the disease is dormant."

Since suppression of the disease at its source, as above described, is at present impracticable, its control will have to be met by other means.

Influenza is a mild disease in its uncomplicated form, but fatal when accompanied by complications and should suspicious cases appear in a group the patients should be immediately isolated and put to bed. For influenza, like measles, is rarely, if ever, the immediate cause of death but these virus infections pave the way for secondary invaders like pneumococci, streptococci, etc.

Rackemann and Brock draw attention to the following resemblances between influenza and measles in order to stimulate further study of their etiology. Both diseases occur in epidemic form and are very highly contagious. Their clinical course is similar; both diseases having a sudden onset, with fever of high degree and short duration. In the acute stages the upper respiratory symptoms with coryza, lacrymation and an aggravating, unproductive cough are alike. The occasional faint evanescent rash in influenza is often suggestive of measles. Both diseases have a low leucocyte count. The greatest similarity, however, lies in the predisposition of patients to develop secondary infections of the lungs and pleura.

Because of the communicability of the disease and present-day modes of travel, its control in large cities, due to the overcrowded conditions of the street railways, elevators and many other places where people congregate, is a difficult problem. On account of the mildness of the cases, the number of carriers, and persons suffering from "colds" that may be cases of influenza, the early isolation of the cases is one of

the most known effective measures in preventing the spread of the disease and the application of this measure depends upon the individual himself. Therefore, one of the most important measures of health departments is to instruct the people or better inform them as to how they can help in preventing the spread of influenza. There is no doubt that if every person in this country—both child and adult—could be educated to the importance of keeping their hands away from the nose and mouth and of washing the hands frequently, always protecting the mouth with the handkerchief when sneezing, or coughing, a great step forward would be taken in the prevention of respiratory diseases.

The provision of hospital, medical and nursing facilities and various other sociological activities connected with the management of the community during the epidemic of influenza, are measures of the utmost importance as having a bearing, not only upon the extension of the disease, but upon the total death rate, the comfort of the victims and the subsequent influences upon related health matters, such as prevalence of tuberculosis. It is of the utmost importance that communities so organize themselves that adequate hospital care can be provided for cases of influenza and complicating pneumonia. All cases of pneumonia following influenza should be isolated from the lobular type of pneumonia caused by several varieties of the organism because either or both patients might contract a double infection. A number of the smaller cities in the State are to be commended on the way they handled the influenza situation, especially from the standpoint of nursing and hospitalization.

The most important factor then in the control of influenza is the early detection and isolation of the cases. This can only be brought about by educating the public in the elementary facts concerning influenza and arousing the people generally to practice hygienic measures which will protect them from the disease.

Preventive measures against influenza require the intelligent cooperation of every individual in the community. The attitude of each person must be to report sickness, rather than to conceal it; to respect suspicious signs of sickness, rather than to ignore them; to impose some degree of self-isolation, rather than mingle closely with others; and to observe personal hygiene, rather than assert an excessive degree of personal liberty and independence. Prevention at present depends upon individual initiative rather than public measures.

TYPHOID FEVER

During the fiscal year, there were reported 2,293 cases of typhoid fever as compared with 1,193 for the previous year, and 963 for the year 1917-1918. During the past year, there were a number of outbreaks, 67 cases being reported from Coles County, of which Mattoon had 54. Kane County reported 56, of which Aurora had 6, Elgin 10;

Franklin County reported 105; Knox County 58, Galesburg reporting 46; Lake County 79; Morgan County 61, of which 37 were reported from Jacksonville; Saline County 62; Will County 116, of which Joliet reported 72; Williamson County 60; Madison County 50. The State institutions reported 15 cases in all. Cook County reported 343 cases, 305 of these being in Chicago, that city having the lowest typhoid fever death rate in its history.

MALARIA

The reporting of malaria for the year 1919-1920 was most gratifying, a total of 2,011 being received as compared with 199 the previous year. The ten counties reporting the largest number of cases are: Clinton, 201; Bureau, 91; Franklin, 147; St. Clair, 86; McLean, 84; Morgan, 78; Saline, 65; Pike, 64; Henry, 57; Marshall, 48.

SMALLPOX

During the fiscal year ending June 30, 1920, there were reported to the Division of Communicable Diseases, 7,807 cases of smallpox, showing a slight decrease from the year 1918, when 8,116 cases were reported. In 1917, there were 5,670 reported cases. The continued prevalence of this disease is a sad commentary on the intelligence of the people, smallpox being an entirely unnecessary scourge, as its prevention depends only on a simple and harmless vaccination which costs little to apply.

While there have been no very widespread or severe epidemics, there have been a number of invasions by the disease, entailing human suffering, loss of life and disturbance of business and social affairs which could readily have been avoided. Cook County, representing almost one-half of the population of the State, and where vaccination is generally employed, reports only 164 cases of smallpox. In Hamilton County, 589 cases of smallpox were reported; in Franklin County, 500 cases; in Rock Island County, 406 cases; and in Greene County 469 cases.

MEASLES

Measles, although considered one of the "minor" diseases, is the cause of twice as many deaths of children as scarlet fever. Not until the time comes when parents feel their responsibility in protecting their children from these so-called "minor" diseases, can we expect a lowering of the morbidity and mortality rates for measles.

During the fiscal year there were 33,535 cases of measles reported, as against 29,191 cases in 1918, and 45,945 in 1917. The number of measles cases increase during the fall and assumes epidemic proportions in the winter and spring months.

WHOOPIING COUGH

Whooping cough, another of the so-called minor diseases of childhood, may well be considered one of the major diseases when one con-

siders the toll it levies. During the year 1919, this disease caused three times the mortality due to scarlet fever, and almost fifty times as many deaths as were caused by smallpox.

During the fiscal year, 13,275 cases of whooping cough were reported, being nearly twice the number for 1919, when 7,214 cases were reported.

SCARLET FEVER

During the fiscal year, there were reported to the Division of Communicable Diseases, 16,810 cases of scarlet fever, four times the number of cases reported during the past year.

During the past year, there were outbreaks of scarlet fever in epidemic proportions at Quincy, Chicago, Evanston, Oak Park, Aurora, Elgin, Alton, Bloomington, Peoria, East St. Louis, Joliet and Rockford.

DIPHTHERIA

In spite of the fact that the State has placed at the disposal of all persons, through the distribution of diphtheria antitoxin, means of prevention, immunization and cure from diphtheria, it is to be noted that during the fiscal year ending June 30, 1919, there were 12,876 cases of diphtheria reported. Although there is a general decrease of this disease, there is small excuse for its continued prevalence. Laboratory methods of diagnosis have been developed along the simplest possible lines and such diagnoses are available not only at the central laboratory at Springfield, but in the several branch laboratories throughout the State.

EPIDEMIC MENINGITIS

During the fiscal year ending June 30, there were reported to the Division of Communicable Diseases, 302 cases of epidemic meningitis, as against 591 for 1918 and 247 for 1917.

Chicago reported 102 cases, Alton 33 cases and Clinton County 14.

POLIOMYELITIS

During the fiscal year there was a decided decrease in the number of poliomyelitis cases, there being 364 cases as compared with 883 in 1918, and 934 in 1917. Of the 364 cases, the largest numbers were reported from Chicago, Mattoon, Fulton County, Bureau County, LaSalle County, Macoupin County and Warren County.

PNEUMONIA

During the past few years there has been a general observance of the rules and regulations of the department relative to the reporting of pneumonia. This is probably due to the fact that pneumonia so often complicated influenza. For the past fiscal year there were 18,270 cases of pneumonia reported, as compared with 20,097 during the previous year.

THE COST OF COMMUNICABLE DISEASES

In the first and second annual reports of the State Department of Public Health, there were published tables showing the financial loss from preventable disease and it is believed that the facts contained in these tables have gone further toward securing public and official attention to disease prevention than any other argument or evidence ever offered. The data afforded a specific way of impressing upon city and county officials the actual tremendous cash penalty their communities were bearing annually on account of the failure to provide adequate means of disease prevention. A similar table for the fiscal year ending June 30, 1920, has been included in this report, (Table XI).

In computing the cost of communicable diseases, the following definite factors were taken into consideration and in every instance it is believed that the figures employed result in an under statement rather than an exaggeration of the facts; cost of human life, computed at \$3,000 for the adult and \$500 for the child; cost of burial for the adult, \$100 and \$50 for the child; estimate of the number of cases of illness for each death from disease prepared upon recognized epidemiological standards; the cost for medicine and nursing for the sick and the value of the loss of time from productive or gainful occupation. In these compilations, each disease was given careful and separate consideration and it is believed that the resultant figures state the case as clearly and accurately as it can be stated.

According to these figures, the total cost of communicable disease for the fiscal year, amounted to \$150,070,738. In this tremendous cost to the people of the State, tuberculosis once again takes first place. During the previous fiscal year pneumonia, which had prevailed to an enormous extent during the influenza epidemic, took precedence over the "great white plague." The cost of tuberculosis during the past fiscal year was \$90,200,500, pneumonia occupying second place with a cost of \$28,486,953, and influenza third place with a cost of \$18,895,551. The annual cost to the people of the State for the other communicable diseases was as follows: typhoid fever \$2,066,110; malaria \$2,703,153; smallpox \$809,119; measles \$591,701; scarlet fever \$770,334; whooping cough \$453,490; diphtheria \$945,069; rabies \$10,050; syphilis \$3,539,103; gonococcus infection \$380,483; epidemic meningitis, \$60,620; poliomyelitis \$81,925 and septic sore throat \$301,500.

DISTRIBUTION OF PREVENTIVE AND CURATIVE AGENCIES

The Division of Biological and Research Laboratories, created by the last legislature, has found it impossible to function, owing to inability to obtain quarters. The distribution of biological products, therefore, has been taken care of by the Division of Communicable Diseases, as formerly, the products being purchased by contract from reputable commercial houses.

Recognizing the importance and great public economy of the free distribution of diphtheria antitoxin, the State Department of Public Health, during the past year, as in previous years, has distributed through several hundred agencies, both preventive and curative antitoxin; the Schick test to determine immunity to diphtheria; typhoid and para-typhoid vaccine; nitrate of silver solution for the prevention of blindness through infection of the eyes at birth, and smallpox vaccine for use in State institutions or in unusual emergencies.

During the fiscal year just passed, the following quantities of diphtheria antitoxin were distributed:

14,166	1,000 unit packages, chiefly for preventive use.
4,859	3,000 unit packages, for individual curative use.
9,717	5,000 unit packages, for individual curative use.
8,995	10,000 unit packages, for individual curative use.
839	10,000 unit packages, for institutional use.
730	20,000 unit packages, for institutional use.

39,306 packages or 190,268,000 units.

Of 17,218 cases of diphtheria in Illinois during the fiscal year ending June 30, 1920, and part of the preceding year on which reports have been made to this office, 1,075 or 6.24 per cent died. The death rate in cases in which State antitoxin was used has gradually but slowly decreased during the last ten years. Such decrease, approximately one per cent, may safely be ascribed to increased initial doses and to early administration of the serum.

These figures are probably underestimated, as, in a considerable number of reports, the physicians administering the antitoxin failed to indicate the type of the disease. Of the 1,075 fatal cases, 482 were reported as of the laryngeal type. This probably is also underestimated. In 468 cases resulting fatally, the day of the membrane was not stated in the report on the antitoxin administered; 105 were reported as occurring on the first day of the membrane; 180 as on the second day; 114 on the third day; 75 on the fourth; 64 on the fifth; 39 on the sixth; 19 on the seventh; 2 on the eighth; 3 on the ninth; 4 on the tenth; and 1 on the fourteenth.

Complications in fatal cases were reported as follows: adenitis in 7 cases; arthritis in 1 case; broncho-pneumonia in 21; burns in 1; cerebro-spinal meningitis in 4; embolism in 1; endocarditis in 3; gastro enteritis in 6; hemophilia in 2; influenza in 8; laryngeal paralysis in 7; measles in 14; myocarditis in 23; nasal hemorrhage in 5; nephritis in 18; neuritis in 1; oedema of glottis in 3; oedema of larynx in 2; oedema of lungs in 1; paralysis of lower limbs in 1; paralysis of palate in 3; parotitis in 1; peritonitis in 1; pharyngeal paralysis in 4; pneumonia in 32; scarlet fever in 58; tuberculosis of lungs in 1; uraemic convulsions in 1; Vincent's angina in 1; and whooping cough in 1. These statistics are taken from the clinical reports of the physicians by whom the antitoxin was administered. It is evident that in many instances the complications were not indicated in the reports.

The ages of the fatal cases were as follows: Not stated, 10 cases; 1 year old, 110; 2 years, 135; 3 years, 158; 4 years, 125; 5 years, 110; 6 years, 90; 7 years, 75; 8 years, 48; 9 years, 37; 10 years, 45; 11 years, 18; 13 years, 10; 14 years, 7; 15 years, 5; 16 years, 5; 17 years, 13; 18 years, 10; 19 years, 5; 20 years, 4; 21 years, 5; 22 years, 2; 23 years, 3; 24 years, 3; 25 years, 4; 26 years, 3; 27 years, 2; 28 years, 3; 29 years, 3; 30 years, 3; 31 years, 2; 33 years, 3; 35 years, 2; 44 years, 1; 56 years, 1.

The ages of the non-fatal cases were as follows: Not stated, 280 cases; 1 year old, 430; 2 years, 847; 3 years, 1,029; 4 years, 1,218; 5 years, 1,116; 6 years, 1,204; 7 years, 1,134; 8 years, 1,068; 9 years, 831; 10 years, 745; 11 years, 672; 12 years, 534; 13 years, 390; 14 years, 357; 15 years, 245; 16 years, 264; 17 years, 203; 18 years, 210; 19 years, 200; 20 years, 189; 21 years, 192; 22 years, 185; 23 years, 194; 24 years, 163; 25 years, 201; 26 years, 198; 27 years, 138; 28 years, 170; 29 years, 117; 30 years, 190; 31 years, 72; 32 years, 103; 33 years, 70; 34 years, 77; 35 years, 138; 36 years, 63; 37 years, 72; 38 years, 65; 39 years, 42; 40 years, 68; 41 years, 46; 42 years, 54; 43 years, 25; 44 years, 19; 45 years, 33; 46 years, 26; 47 years, 28; 48 years, 33; 49 years, 16; 50 years, 35; 51 years, 12; 52 years, 16; 53 years, 21; 54 years, 14; 55 years, 11; 56 years, 10; 57 years, 9; 58 years, 8; 59 years, 4; 60 years, 9; 61 years, 2; 62 years, 7; 63 years, 2; 64 years, 1; 65 years, 4; 66 years, 3; 67 years, 3; 69 years, 2; 70 years, 2; 75 years, 1; 79 years, 2; 82 years, 1.

Complications in non-fatal cases were reported as follows: abscess of cervical glands in 5 cases; adenitis in 29; appendicitis in 2; arthritis in 4; bronchopneumonia in 14; cerebrospinal meningitis in 1; chicken pox in 9; confinement in 1; endocarditis in 2; erythema nodosum in 1; erysipelas in 2; facial paralysis in 1; glandular tuberculosis in 1; influenza in 21; laryngeal paralysis in 7; measles in 52; mumps in 3; myocarditis in 16; nephritis in 28; oedema of glottis in 1; oedema of lungs in 5; otitis media in 31; paralysis of glottis in 1; paralysis of lower limbs in 1; paralysis of ocular muscles in 1; paralysis of palate in 12; pericarditis in 1; peritonsillar abscess in 14; pharyngeal paralysis in 17; pneumonia in 33; post diphtheritis paralysis in 12; scarlet fever in 478; typhoid fever in 1; uremia in 1; Vincent's angina in 2; and whooping cough in 7.

TABLE VI—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEAR JULY 1, 1918, TO JUNE 30, 1919.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria.....	487	362	604	990	703	705	731	769	665	635	668	470	7,789
Influenza.....			541	145,067	40,806	43,304	28,354	13,369	10,486	2,029	166	20	284,142
Malaria.....	2	1	3				18	20	55	97	2	1	199
Measles.....	273	121	56	141	67	171	711	1,072	2,453	5,754	5,204	3,142	19,165
Meningitis epidemic.....	26	14	16	8	4	12	20	16	14	11	18	12	171
Polioomyelitis.....	43	73	79	18	2	2	9	3	7	4	13	12	265
Scarlet fever.....	150	101	231	189	201	208	440	588	662	586	495	289	4,140
Whooping cough.....													7,214
Pneumonia.....	142	68	255	10,375	2,274	2,596	1,160	820	890	600	562	355	20,097
Smallpox.....	103	73	26	42	36	114	322	284	465	567	554	442	3,028
Tuberculosis.....	1,563	1,182	973	891	1,208	637	1,390	1,397	1,436	1,923	1,586	1,723	15,909
Typhoid fever.....	212	241	286	102	24	86	33	33	39	47	32	64	1,199
Veneral diseases.....		6			126								132
Chancroid.....	51	36	32	24	29	29	32	51	28	47	42	44	445
Gonorrhea.....	643	598	803	524	387	347	387	544	533	584	620	739	6,709
Syphilis.....	359	257	199	172	220	131	159	274	253	272	254	317	2,869

TABLE VII—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEAR JULY 1, 1919 TO JUNE 30, 1920.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Typhoid fever.....	265	294	306	346	251	183	124	80	88	115	103	138	2,293
Malaria.....	417	294	265	170	97	63	59	112	84	114	142	194	2,011
Smallpox.....	183	135	232	260	648	779	776	842	748	1,063	1,232	909	7,807
Measles.....	1,110	255	118	342	706	1,727	4,366	4,610	4,982	5,343	5,542	4,434	33,535
Scarlet fever.....	211	188	579	1,295	1,597	1,895	2,449	2,235	2,335	1,708	1,456	862	16,810
Whooping cough.....	618	802	723	554	818	1,206	1,143	1,222	2,061	1,204	1,460	1,464	13,275
Diphtheria.....	541	528	992	1,898	2,050	1,505	1,139	938	1,058	778	793	656	12,876
Influenza.....	272	384	562	723	549	711	80,020	80,946	5,731	741	159	156	170,954
Rabies.....		1	3	3				1	3			3	14
Tuberculosis (all kinds).....	1,720	1,447	1,627	1,719	1,693	1,580	1,433	1,164	1,820	1,320	1,295	1,468	18,286
Meningitis epidemic.....	25	20	11	33	31	21	31	33	28	12	14	13	272
Polioomyelitis.....	77	101	70	28	29	17	3	5	9	7	6	12	364
Pneumonia.....	308	185	233	451	601	1,275	7,012	4,049	1,655	1,066	936	485	18,276
Septic sore throat.....	80	81	119	177	224	210	180	278	206	114	57	63	1,789
Syphilis.....	438	563	775	1,137	1,390	1,349	1,206	724	1,503	1,297	1,622	1,218	13,222
Gonorrhea.....	954	1,075	1,083	2,074	2,324	1,599	1,413	966	1,350	1,435	1,728	1,669	17,670
Chancroid.....	43	54	37	121	133	78	94	70	64	71	71	148	984

TABLE VIII—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO BY MONTHS FOR THE FISCAL YEAR JULY 1, 1918, TO JUNE 30, 1919—MORBIDITY SUMMARY.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria.....	324	264	392	607	502	558	701	541	553	460	527	413	5,842
Influenza.....			437	34,792	2,490	9,063	4,636	2,075	1,347	430	421	17	55,708
Malaria.....													
Measles.....	192	78	51	101	61	181	347	580	1,609	3,873	4,285	2,846	14,304
Meningitis.....													
epidemic.....	18	14	12	7	5		14	10	11	7	17	6	121
Poliomyelitis.....	17	28	15	5		5	8	2	5	4	11	4	104
Scarlet fever.....	92	62	163	104	106	163	235	268	298	238	283	185	2,197
Pneumonia.....	68	61	261	11,290		450	825	1,428	1,302	1,114	540	330	17,669
Smallpox.....	6	7	10	1		13	21	5	24	7	13	5	112
Tuberculosis.....	1,492	1,203	347	898	763	871	1,328	4,263	1,274	1,713	1,467	1,683	17,302
Typhoid fever.....	29	59	53	20	7	10	10	6	12	17	16	19	258
Veneral diseases.....													
Chancroid.....	35	26	25	21	25	29	25	45	30	24	53	37	375
Gonorrhea.....	455	423	447	294	282	287	324	422	460	480	390	584	4,848
Syphilis.....	285	304	160	158	189	146	143	249	227	242	340	311	2,754

TABLE IX—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO BY MONTHS FOR THE FISCAL YEAR JULY 1, 1919, TO JUNE 30, 1920—MORBIDITY SUMMARY.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Typhoid fever.....	31	36	33	78	35	21	14	4	12	13	14	14	305
Malaria.....	2	19		5	5	8	2	18	26	7	17	6	120
Smallpox.....			5										
Measles.....	753	153	101	270	536	757	977	941	1,271	1,439	1,441	1,269	9,908
Scarlet fever.....	99	97	304	656	893	1,101	1,379	1,276	1,450	941	756	455	8,407
Whooping cough.....	607	484	506	292	390	696	475	400	471	424	420	395	5,550
Diphtheria.....	350	282	514	948	1,112	779	601	542	725	539	545	474	7,411
Influenza.....	16	26	164	218	178	212	22,323	6,606	997	135	58	21	31,254
Rabies.....			1										2
Tuberculosis (all kinds).....	1,431	1,065	1,201	1,274	1,199	1,084	1,101	902	1,366	1,020	885	1,010	13,538
Meningitis.....													
epidemic.....	10	7	7	15	13	1	12	10	15	5	4	3	102
Poliomyelitis.....	27	42	13	3	2	2		3	3		1	3	105
Pneumonia.....	277	167	191	378	483	978	4,687	839	1,159	825	739	413	11,136
Septic sore throat.....	1	2	3	14	32	39	32	10	15	10	13	10	181
Syphilis.....	353	658	719	743	548	524	467	366	454	419	460	408	6,149
Gonorrhea.....	754	1,151	940	964	1,042	802	806	842	752	879	794	695	10,423
Chancroid.....	36	43	42	52	50	31	108	90	65	18	15	34	574

TABLE X—SHOWING THE PREVALENCE OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES BY COUNTIES AND PRINCIPAL MUNICIPALITIES FOR THE FISCAL YEAR JULY 1, 1919, TO JUNE 30, 1920.

County.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.	Rabies.	Tuberculosis.	Epidemic meningitis.	Polymyelitis.	Pneumonia.	Septic sore throat.	Syphilis.	Gonorrhea.	Chancreoid.
Adams.	5	3	21	13	101	25	15	644	1	42	2	1	18	6	3	2	8
Quincy.	22	1	36	8	73	54	49	406					48		189	284	
Alexander.	4	5	26	136	8	8	31	259					13	60	1	1	
Caro.	1	8		98	6	26	66	454		6			35		22	5	
Bond.	1			13	36		13	1,545		13	1		45	66	6	12	3
Boone.	10	10	23	200	22	49	10	591		22		3	33				
Brown.	3	42	12	12	51	177	23	797		47		11	6	6	10	19	2
Bureau.	4	91	19	65	68	17	10	2,348		6			97		33		
Calhoun.	1	6	77	18	27	173	10	1,045		17			23		2		
Carroll.			43	38	8	31	29	927		8	4		36	3	24	27	
Cass.	9	4	22	151	29		10	1,864		19			41	4	10	4	
Champaign.	11	28	22	192	148	60	7	1,864		66		3	57	3	27	25	4
Champaign.	15	7	62	26	62	62	9	2,079		19			4				
Urbana.	10	4	24	24	24	59	6	144		66	1				181	399	4
Christian.	26	16	36	218	89	26	53	1,083		42	3	1					
Clark.	14	24	74	31	31	44	23	286		10	2		18	48	16	34	1
Clay.	21	28	74	50	55	118	15	1,590		40	2		17	6	12	4	
Clinton.	17	201	2	32	27	71	26	1,122		6	14		17	30	26	71	1
Coles.	13	15	81	84	20	20	15	908		24	1		55	80	74	17	
Malcon.	64	4	37	57	15	23	17	162		15		11	604	63	63	113	16
Cook.	37	4	44	1,169	972	886	678	6,514		254	12	11	11,136	181	6,149	10,423	574
Chicago.	305	180	8,407	9,008	8,407	5,550	7,411	31,254	2	15,538	102	106					
Evans.	9	6	177	66	28	23	28	618		11	3	1	34		1	3	
Franklin.	7	3	183	166	163	198	98	495		31			132		1		
Oak Park.	7	15	74	97	41	19	18	467		15			66	17	11	5	
Crawford.	10	2	26	19	41	59	38	684		10		2	25	34	1	6	
Cumberland.	7	15	45	45	45	59	11	1,054		24	1	2	22	4	1	7	
DeKalb.	1	5	10	92	6	6	9	237		9			22	4	1	1	
DeKalb.	1	1	3	41	10	3	20	1,063		20	1	1	45	5	8	9	1
Douglas.	5	1	23	79	43	39	20	731		69			59	8	2	4	
DuPage.	20	11	34	147	144	328	63	731		71	4	4	38	1	3	2	
Edgar.	5	4	6	469	172	13	13	852		71			1	34	4	9	
Edwards.	9	5	279	163	89	21	8	752		46	6		41	9	2		
Efingham.	8	10	11	95	2	21	27	676		46			13	41	2		
Fayette.	28	14	49	118	49	14	40	637		14	1	3	41	26	6	3	
Ford.	35	40	37	346	46	31	21	749		14			62	15	1		
Franklin.	13	13	44	130	44	123	6	1,500		8		1	100	14	116	84	11
Franklin.	105	147	500	630	-24	103	36	2,049	2	25	3	2					

	9	10	19	49	90	91	45	2,812	31	1	10	110	31	15	33	7
Fulton	14	4	90	18	5	27	26	841	9	4	4	69	34	13	17	4
Galatin	19	6	489	24	52	28	8	1,181	7	1		41	17	3		
Greene	2	3	59	6	80	13	27	729	27			33	12	2		
Grundy	20	20	589	104	64	18	20	1,256	15			124	23	18	12	1
Hancock	12	2	28	51	77	175	8	3,107	15			3				
Hardin	2	2	30	8			1	99	1	3	1	3				
Henderson	18	28	21	21	31	10	2	342	2			14	9	5		
Henry	31	101	138	7	68	122	73	4,686	12	1	1	135	12	7	18	1
Keosau	10	66	152	7	19	6	3	298	9		2	118	7	4	9	
Iroquois	18	2	6		75	45	70	1,443	26		3	56	28	26	13	
Jackson	19	27	103	333	86	12	17	1,589	36	5	2	183	10	62	34	4
Jasper	30	15	17	34	61	11	12	1,154	28			24	10	6	6	
Jefferson	33	29	81	74	43	45	54	1,982	77	1		95	13	33	10	5
Jersey	10	1	72	9	11	10		154	2			8	3	4	9	1
JoDavies	6	9	10	57	28	66	3	509	7	3	4	20	26	6	2	
Johnson	23	35	56	34	11	28	22	589	30			26	193	3	3	
Kane	10	2	8	64	102	144	20	791	15		2	26	2	52	52	
Aurora	36	20	280	111	97	42	27	578	97	6		111	7	65	149	
Elgin	10	6			70	175	16	724	84	2		96	40	78	56	4
Kankakee	18	5	11	402	29	166	61	1,035	87			50	5	18	5	
Kendall	3	1	10	16	28		13	613	9	1		53	3			
Knox	12	10	74	53	14	38	29	1,217	13		3	27	3	15	5	1
Galesburg	46	209	27	27	60	60	15	249	13		4	38	106	88	106	2
Lake	79	3	16	519	159	65	26	1,803	21	3	9	91	12	37	75	2
LaSalle	18	37	374	74	52	45	2,945	2,945	35	1	18	88	3	65	62	
LaSalle	11	12	83	83	12	6	6	396	38	2		59		84	50	
Sreator	2		21	21	12	9	114	701	6			6		33	64	
Lawrence	18	23	190	223	37	21	4	570	26			9	11	3	3	
Lee	1	1	4	252	118	41	14	866	30			26	2	18	1	
Livingston	6	6	387	135	58	58	33	2,460	20	1		110	7	121	45	
Logan	5	5	32	187	63	50	35	2,205	29	1	1	129	5	44	25	2
Macon	1	1	16	481	101	51	44	921	17			20	3	24	20	4
Decatur	26	10	39	1,089	89	177	93	1,069	55	7	2	66	6	517	601	18
Macoupin	10	10	148	118	146	123	117	1,781	36	2	10	44	6	208	130	8
Madison	36	37	56	17	147	9	311	2,382	105	3	3	83	13	81	141	1
Alton	14	1	15	294	82	100	48	608	89	83		89	3	272	392	27
Marton	32	3	12	460	23	29	178	1,404	70			57	57	5	4	
Marshall	3	48	3	18	6		5	730	4		3	68	2	9	3	
Mason	12	5	15	1	40	223	18	1,296	11			21	2	4	14	1
Massac	11	26	72	53	55	3	47	186	25			20	16	8		
McDonough	12	2	142	6	23	109	15	2,131	20		5	175	16	7	6	
McHenry	5	4	398	4	250	42	146	1,600	20	1	4	87	15	7	38	
McLean	12	84	300	8	126	143	109	2,315	17	3	1	84	17	22	68	9
Bloomington	13	5	17	17	91	19	45	402	77		7	18	13	167	31	
Menard	3	12	214	14	50	91	20	1,415	20			36	13	12	42	2
Mercer	20	22	66	4	2	63	2	1,494	9	1		18	23	5	3	1
Monroe	5	2		91	52	2	8	358	1			21	1			

TABLE X—Concluded

County.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.	Rabies.	Tuberculosis.	Epidemic meningitis.	Poliomylitis.	Pneumonia.	Septic sore throat.	Syphilis.	Gonorrhea.	Chancroid.
Montgomery.	18	10	21	342	64	117	65	1,410		18	1			69	56	40	1
Morgan.	24	24	108	83	16	34	34	1,450		9		2		65	17	6	10
Madisonville.	37	77	103	48	7	19	19	1,450		27				11	120	56	3
Moultrie.	7	1	37	109	47	13	7	805		1		1		7	4	4	
Ogle.	7	1	34	288	75	43	3	1,297		14	3	4		62	15	15	
Perry.	3	17	56	87	111	47	30	1,633		178	4			30	6	10	
Perry.	15	15	70	483	376	195	277	2,929		17	1			68	233	353	26
Perry.	19	21	78	459	18	10	37	752		18		13		24	2	8	
Perry.	18	64	183	448	50	81	1	2,566		28	1			44	3	33	1
Pike.	8	8	103	103	14	50	4	322		23		2		15	19	14	3
Pope.	13	23	68	131	2	4	5	308		13		8		17	3	22	3
Pulaski.	4	4	6	13	4	2	7	189		3	3			14	5		
Pulaski.	6	6	4	14	19	19	43	1,217		8				28	6		2
Randolph.	33	1	262	623	46	5		1,243		90		4		74	2	206	8
Richland.	44	1	144	660	66	169	6	94		90	4			116	52	206	16
Rock Island.	62	65	383	328	37	236	78	971		46	4			79	191	191	4
Saline.	14	10	64	78	107	64	173	1,710		46	1	1		57	61	180	2
Sangamon.	24	7	25	166	159	30	83	1,075		38	5			67	46	452	1
Springfield.	2	1	37	2	1	12	12	257		2				11	13	6	1
Scott.	2	16	25	4	2	50	15	850		5		1		11	6	1	
Schuyler.	18	2	4	254	51	68	6	1,170		9		2		32	16	5	
Shelby.	2	2	4	9	10	24	62	585		4		3		17	5	2	
Stark.	12	33	23	430	16	29	184	715		11	3			33	1	12	
St. Clair.	19	55	67	689	67	9	64	1,064		145	6	3		6	14	154	1
Belleville.	19	19	67	689	67	9	11	312		11		1		82	44	1,072	155
East St. Louis.	1	1	10	17	5	47	19	363		14	2	1		23	5	5	
Stephenson.	13	8	11	39	43	47	26	1,188		12	2	3		60	140	266	2
Freeport.	13	7	19	128	60	26	17	475		6		4		38	80	84	6
Tazewell.	22	240	127	80	13	109	46	948		22	1	2		49	65	3	
Union.	22	7	81	704	62	38	15	1,189		25		2		63	24	71	
Vermilion.	4	4	13	171	24	38	24	314		47	2	1		180	66	29	17
Danville.	22	32	33	97	22	19	4	326		3	1			22	23		
Wabash.	14	4	320	6	38	26	26	574		6		17		11	1	16	
Warren.	14	28	142	142	27	26	13	397		12				10	6	8	
Washington.	16	32	43	157	9		13	1,150		12				50	2		

White	32	1	189	13	15	44	1,903	14	14	18,286	302	364	18,270	1,789	13,222	17,870	984
White	2	41	49	1,030	58	54	1,829	14	14	18,286	302	364	18,270	1,789	13,222	17,870	984
Will	44	11	11	192	66	13	710	22	22	18,286	302	364	18,270	1,789	13,222	17,870	984
Joliet	73	45	45	124	55	14	240	15	15	18,286	302	364	18,270	1,789	13,222	17,870	984
Williamson	60	48	48	367	43	25	1,461	27	27	18,286	302	364	18,270	1,789	13,222	17,870	984
Winnebago	2	24	24	95	120	8	596	5	5	18,286	302	364	18,270	1,789	13,222	17,870	984
Rockford	10	2	19	111	135	39	1,831	22	22	18,286	302	364	18,270	1,789	13,222	17,870	984
Woodford	15	4	9	15	25	16	1,198	6	6	18,286	302	364	18,270	1,789	13,222	17,870	984
State institutions	15	17	23	196	76	2	1,685	807	807	18,286	302	364	18,270	1,789	13,222	17,870	984
Total	2,293	2,011	7,807	33,535	16,810	13,275	12,876	170,954	14	18,286	302	364	18,270	1,789	13,222	17,870	984

TABLE XI—COST OF COMMUNICABLE

County.	Estimated population Jan. 1, 1920.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
1. Adams.....	62,188	\$ 25,530	\$ 70,227	\$ 5,452	\$ 230	\$ 10,669	\$ 8,050	\$ 6,424	\$193,570
2. Alexander.....	26,059	40,830	386,128	2,507	8,420	344	250	7,124	145,870
3. Bond.....	18,049	10,230	16,000	1,272	2,230	900	-----	1,624	93,120
4. Boone.....	15,322	5,130	1,628	2,607	2,020	569	490	274	68,080
5. Brown.....	10,397	630	-----	4,027	140	1,844	2,870	-----	76,340
6. Bureau.....	47,516	830	14,588	1,842	680	2,269	2,300	1,699	101,150
7. Calhoun.....	8,610	40,830	988	11,015	200	1,244	12,650	2,424	26,120
8. Carroll.....	18,035	-----	-----	4,122	400	219	860	274	17,670
9. Cass.....	17,896	16,130	668	2,127	3,180	744	-----	1,299	77,640
10. Champaign.....	55,965	16,130	188	3,742	2,890	8,569	8,050	3,224	180,440
11. Christian.....	35,309	11,430	19,128	3,459	3,850	2,244	8,200	1,899	122,600
12. Clark.....	23,517	20,430	-----	2,317	2,120	1,344	440	2,424	60,970
13. Clay.....	18,661	2,630	3,388	2,697	520	1,394	9,300	399	90,470
14. Clinton.....	22,947	6,530	32,188	2,227	2,120	1,244	3,450	3,224	48,590
15. Coles.....	35,108	51,030	-----	1,557	6,300	2,494	980	1,924	66,670
16. Cook.....	3,053,017	189,430	29,378	19,762	188,890	350,194	183,520	572,799	7,640,680
17. Crawford.....	22,771	5,130	35,128	7,067	3,170	1,044	1,150	474	73,040
18. Cumberland.....	14,281	1,430	348	1,462	1,070	669	2,300	2,074	47,310
19. DeKalb.....	35,125	5,160	3,288	512	1,900	1,394	620	2,424	90,580
20. DeWitt.....	19,352	1,030	188	2,222	1,360	1,094	940	1,074	54,200
21. Douglas.....	20,074	15,330	1,788	3,267	1,490	5,469	1,150	2,149	63,280
22. DuPage.....	42,120	5,130	668	607	5,260	5,419	3,280	1,624	76,890
23. Edgar.....	27,336	25,530	348	29,642	1,650	3,344	1,150	1,624	41,690
24. Edwards.....	10,049	4,930	105,328	1,082	4,220	69	1,150	2,424	50,330
25. Effingham.....	20,055	11,830	19,128	4,217	2,820	1,794	3,450	3,224	59,240
26. Fayette.....	28,083	45,930	6,428	3,552	8,420	1,719	1,150	2,424	100,660
27. Ford.....	17,096	5,130	2,108	-----	1,320	2,619	8,050	1,624	89,570
28. Franklin.....	32,100	81,630	140,428	50,637	43,070	619	9,200	8,024	275,360
29. Fulton.....	52,841	15,330	1,628	1,842	1,060	2,269	5,750	2,249	257,690
30. Gallatin.....	14,628	20,430	140,428	5,587	200	144	270	7,224	36,480
31. Greene.....	22,883	10,030	19,128	47,692	260	1,869	1,150	774	83,280
32. Grundy.....	18,580	5,130	508	5,642	1,070	2,019	130	1,799	63,260
33. Hamilton.....	18,227	20,430	3,228	55,992	1,060	1,619	3,450	2,424	80,030
34. Hancock.....	28,523	10,230	348	2,507	530	1,944	8,050	1,624	114,940
35. Hardin.....	7,015	15,330	140,428	14,287	2,120	44	-----	2,424	4,260
36. Henderson.....	9,724	230	2,908	2,507	230	794	1,150	824	37,690
37. Henry.....	43,396	56,130	4,348	9,632	2,570	2,744	2,380	2,474	309,410
38. Iroquois.....	34,841	9,830	348	607	2,090	2,994	2,300	3,974	104,500
39. Jackson.....	37,091	61,230	210,628	9,822	7,200	2,169	2,300	9,624	223,560
40. Jasper.....	18,157	15,330	35,128	1,652	360	2,644	110	1,624	86,110
41. Jefferson.....	30,073	30,630	35,128	7,732	1,120	1,644	450	4,824	150,290
42. Jersey.....	12,682	15,330	188	6,877	110	294	100	-----	39,270
43. JoDavies.....	21,917	1,230	1,468	987	1,140	719	2,300	99	57,960
44. Johnson.....	12,022	25,530	105,328	5,357	360	1,319	1,150	1,674	36,880
45. Kane.....	99,499	20,530	4,408	2,887	4,570	7,294	4,160	6,424	214,400
46. Kankakee.....	44,940	23,530	828	1,082	5,690	1,319	2,210	5,624	23,720
47. Kendall.....	10,777	630	188	987	180	1,269	-----	349	43,500
48. Knox.....	48,663	25,130	3,288	26,922	1,370	1,044	4,600	2,774	132,630
49. Lake.....	74,285	96,930	508	1,557	6,890	6,174	1,200	28,774	380,000
50. LaSalle.....	92,925	20,430	3,288	4,692	6,450	4,669	3,450	6,899	400,180
51. Lawrence.....	28,694	36,930	3,708	18,087	4,450	934	8,050	1,624	61,760
52. Lee.....	27,750	230	3,288	417	3,640	64,969	3,450	1,624	73,230
53. Livingston.....	40,465	5,130	-----	607	4,440	74,819	4,600	3,224	114,230
54. Logan.....	31,718	5,130	-----	3,077	2,440	2,144	1,150	1,999	127,620
55. Macon.....	65,175	15,530	3,288	5,262	20,760	3,919	5,580	5,099	240,170
56. Macoupin.....	57,274	2,030	4,728	14,095	1,200	4,019	6,800	6,799	123,380
57. Madison.....	106,895	45,930	19,600	6,782	8,080	8,494	4,600	23,849	276,970
58. Marion.....	37,497	20,430	3,288	1,177	6,822	594	2,250	60,094	287,610
59. Marshall.....	14,760	5,130	7,708	322	200	169	1,150	824	47,770
60. Mason.....	16,634	20,430	5,048	1,462	30	1,019	3,330	1,024	65,830
61. Massac.....	15,267	30,630	70,228	9,977	4,220	2,494	2,300	3,399	14,430
62. McDonough.....	26,887	5,530	348	17,327	80	594	3,450	599	95,880
63. McHenry.....	33,164	1,030	-----	417	5,650	8,469	1,700	5,874	93,670
64. McLean.....	68,165	66,330	11,368	1,082	5,190	6,104	3,990	7,174	272,240
65. Menard.....	11,694	630	1,948	20,367	160	1,250	1,150	2,174	54,025
66. Mercer.....	18,800	4,030	3,548	6,307	60	69	2,300	124	86,410
67. Monroe.....	12,839	5,100	348	-----	4,220	1,319	20	224	16,150
68. Montgomery.....	41,403	6,730	1,628	2,032	5,090	2,169	1,720	3,849	200,270
69. Morgan.....	33,567	24,630	12,508	20,882	1,330	594	1,150	2,424	171,410

DISEASES FISCAL YEAR, JULY 1, 1919 TO JUNE 30, 1920.

Rabies.	Tuberculosis.	Syphilis.	Gonococcus infection.	Epidemic meningitis.	Polio-myelitis.	Pneumonia.	Septic sore throat.	County total.	Per capita.
\$50	\$	\$	\$10,286	\$ 604	\$ 1,600	\$	\$ 4,795	\$ 1,489,745	\$23.31
-----	867,640	33,316	18,736	-----	-----	251,302	-----	1,700,787	65.27
-----	924,840	30,916	18,736	-----	-----	134,822	-----	391,929	21.71
-----	238,840	1,316	336	579	-----	24,817	665	307,490	20.06
-----	160,240	-----	-----	-----	700	65,662	-----	381,098	36.74
-----	160,240	1,000	-----	-----	600	133,342	65	724,786	15.25
-----	461,550	7,116	475	-----	3,200	123,902	3,195	251,458	29.20
-----	134,040	100	-----	-----	-----	21,847	-----	223,916	12.40
-----	147,140	4,016	186	-----	-----	47,462	1,600	288,092	16.10
-----	134,040	9,316	3,811	-----	-----	39,102	35	918,661	16.41
-----	497,740	27,916	15,836	1,304	850	138,462	1,620	673,001	19.06
-----	356,740	3,416	661	79	880	138,462	35	543,092	23.09
-----	343,640	7,116	-----	54	600	98,422	3,195	468,141	25.08
-----	305,340	2,316	886	54	800	47,462	485	431,706	18.81
-----	251,950	11,216	136	1,454	-----	69,302	85	596,383	16.98
-----	217,440	13,816	2,236	579	600	127,554	3,215	65,656,363	21.50
3,200	39,603,640	1,378,416	66,683	30,429	17,450	15,424,152	57,740	427,972	14.40
-----	225,740	1,816	61	-----	-----	74,152	-----	205,651	14.40
-----	81,640	7,116	3,261	1,954	100	54,742	175	561,791	15.99
-----	369,840	916	211	29	1,500	80,222	3,195	322,966	16.68
-----	186,400	4,616	261	654	50	65,662	3,215	269,872	18.42
-----	188,240	916	3,236	-----	100	80,222	3,236	553,841	13.15
-----	343,640	4,116	86	654	750	105,702	15	532,851	19.49
-----	382,940	1,116	261	654	800	40,182	1,920	415,315	21.62
-----	225,740	916	-----	154	800	18,077	95	545,751	27.20
-----	343,640	7,116	286	29	1,600	87,502	415	607,422	20.05
-----	317,440	1,316	186	-----	2,400	109,342	6,455	342,850	49.22
-----	173,340	3,916	111	-----	50	55,012	-----	874,616	16.55
100	723,540	18,516	5,236	2,604	800	218,552	1,720	503,950	34.45
-----	396,040	11,516	861	29	1,600	174,862	1,890	521,331	22.83
-----	238,840	-----	-----	-----	-----	49,757	1,590	265,415	12.31
-----	291,240	5,116	461	104	750	69,302	175	569,986	31.27
-----	120,940	1,016	86	29	-----	62,022	1,850	497,232	17.52
-----	330,540	-----	-----	-----	800	69,302	125	331,350	45.71
-----	278,140	2,516	336	-----	50	75,782	235	132,191	23.26
-----	134,040	-----	3,636	79	-----	14,702	-----	1,055,851	24.30
-----	68,540	1,216	-----	-----	-----	14,432	1,670	421,696	12.40
-----	396,040	8,016	561	29	150	254,942	6,425	1,199,706	32.34
-----	225,740	3,316	361	29	150	62,022	3,435	391,806	21.57
-----	527,040	22,416	886	129	1,600	117,847	3,255	812,186	27.01
-----	210,440	-----	186	-----	-----	36,542	1,680	183,943	14.66
-----	553,240	10,216	286	29	800	15,662	135	341,086	15.65
-----	94,740	1,116	261	-----	-----	25,622	35	328,507	27.32
100	186,440	4,416	86	79	200	83,862	-----	1,774,754	15.62
-----	120,940	1,016	111	-----	-----	25,352	3,510	1,541,202	34.30
50	1,444,040	38,816	12,661	1,854	800	800	11,060	145,514	13.50
-----	1,247,540	2,516	3,261	-----	700	214,902	8,280	1,132,121	23.26
-----	81,640	-----	-----	579	-----	16,192	-----	1,830,727	24.64
-----	618,740	20,316	5,911	654	900	276,782	11,060	1,688,331	18.17
100	920,040	26,116	1,911	629	1,550	353,508	4,850	463,041	16.14
-----	916,540	14,936	4,436	79	475	298,622	3,185	471,701	17.00
-----	278,140	1,016	111	654	-----	47,462	115	557,919	13.79
-----	238,840	2,516	61	654	600	76,582	1,600	750,579	23.67
-----	225,740	19,016	1,161	40	1,200	102,062	1,650	1,369,261	21.00
-----	540,140	5,116	661	40	50	60,957	55	769,286	13.43
-----	802,140	73,416	19,261	579	150	170,922	3,185	2,456,315	22.97
-----	502,140	24,616	3,286	86	2,150	163,742	3,215	1,113,170	29.75
-----	1,535,940	42,216	16,361	1,286	700	462,422	3,285	209,152	14.15
-----	608,740	10,516	136	61	100	163,742	1,610	180,442	10.85
-----	94,740	1,616	111	-----	700	47,122	1,590	505,982	33.15
-----	37,200	7,315	386	-----	800	36,542	25	405,107	18.96
-----	291,240	7,716	-----	-----	-----	69,302	45	1,958,091	28.72
-----	173,340	1,316	186	-----	250	98,167	8,040	307,273	18.46
-----	356,740	1,416	936	29	200	149,382	3,305	188,547	14.69
-----	841,440	35,116	11,811	629	800	688,342	3,325	810,766	19.10
-----	173,340	5,016	1,086	-----	-----	43,822	1,710	1,306,222	38.32
-----	186,440	1,216	111	-----	1,600	51,102	1,810	-----	-----
-----	120,940	-----	-----	29	-----	40,182	15	-----	-----
-----	435,340	15,616	4,136	29	800	131,182	175	-----	-----
-----	710,440	22,616	4,836	-----	100	331,402	1,900	-----	-----

TABLE XI—

County.	Estimate popula- tion Jan. 1, 1920.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
70. Moultrie.....	14,630	230	508	3,552	2,210	1,194	120	824	55,620
71. Ogle.....	27,864	1,430	188	417	3,250	2,094	1,150	99	87,540
72. Peoria.....	111,704	25,530	12,048	9,632	8,820	19,894	4,620	18,699	335,400
73. Perry.....	24,303	10,030	105,328	7,447	3,170	1,319	1,150	2,049	105,370
74. Piatt.....	15,714	5,130	---	797	5,600	2,619	1,300	49	44,740
75. Pike.....	26,866	9,830	10,268	15,167	1,040	10,419	1,150	2,424	102,730
76. Pope.....	11,215	---	1,108	1,282	270	---	50	824	12,690
77. Pulaski.....	14,629	830	175,528	6,022	2,410	60	1,150	2,424	65,230
78. Putnam.....	10,325	---	568	590	50	119	20	2,424	20,750
79. Randolph.....	29,109	30,630	35,128	417	6,320	---	610	---	73,640
80. Richland.....	15,970	1,230	35,128	2,792	80	90,999	1,150	3,849	68,420
81. Rock Island.....	85,301	25,730	188	41,707	15,960	33,544	12,650	6,049	165,020
82. Saline.....	38,353	51,030	16,628	36,422	8,580	919	3,450	9,624	208,770
83. Sangamon.....	110,121	23,130	4,888	8,302	4,000	8,369	2,300	14,424	248,890
84. Schuyler.....	13,285	40,830	2,588	2,412	60	244	1,150	4,042	45,670
85. Scott.....	9,489	---	1,468	5,452	40	44	10	74	16,960
86. Shelby.....	29,601	6,330	345	507	3,110	3,919	1,830	224	117,270
87. Stark.....	10,098	430	---	507	110	269	140	74	39,620
88. St. Clair.....	151,490	35,730	140,428	10,662	28,370	5,219	5,750	17,724	215,971
89. Stephenson.....	39,773	5,130	---	1,652	590	7,819	3,450	3,224	174,220
90. Tazewell.....	34,814	6,630	6,548	2,887	1,390	2,694	9,200	1,210	112,900
91. Union.....	21,856	35,730	140,428	12,102	650	336	10	2,324	7,780
92. Vermilion.....	86,162	86,430	4,248	8,967	12,620	5,219	9,200	1,549	53,900
93. Wabash.....	17,201	20,430	105,328	3,172	5,270	2,619	190	824	63,770
94. Warren.....	23,456	5,130	---	54,337	80	969	---	149	89,610
95. Washington.....	18,759	9,930	41,128	5,297	1,990	694	1,150	699	25,840
96. Wayne.....	25,697	15,330	35,128	4,122	1,590	244	610	1,624	92,270
97. White.....	23,052	9,930	35,128	17,992	1,070	390	610	3,324	112,200
98. Whiteside.....	36,174	430	6,588	4,692	13,620	2,019	1,090	799	102,160
99. Will.....	92,875	66,330	---	5,357	5,480	4,144	820	10,424	195,670
100. Williamson.....	62,105	71,430	26,308	2,197	18,920	2,619	4,100	12,824	234,080
101. Winnebago.....	90,929	5,130	668	4,122	3,180	24,169	2,670	9,774	304,440
102. Woodford.....	20,506	---	668	892	170	644	160	249	43,160
Grand total.....	-----	\$2,066,110	\$2,703,153	\$809,119	\$591,701	\$770,334	\$453,490	\$945,069	\$18,895,551

Concluded.

Rabies.	Tuberculosis.	Syphilis.	Gonococcus infection.	Epidemic meningitis.	Polomyelitis.	Pneumonia.	Septic sore throat.	County total.	Per capita.
-----	199,540	1,116	161	-----	50	47,462	1,650	314,237	21.48
-----	251,940	5,316	411	79	200	109,342	85	464,441	16.67
2,296,540	87,516	18,336	1,304	1,304	2,400	546,142	7,940	3,393,821	30.38
317,440	2,916	236	29	-----	-----	43,822	475	600,782	20.60
212,640	-----	61	-----	-----	650	47,462	25	321,133	20.44
448,440	4,116	836	1,304	-----	-----	72,942	3,235	684,351	25.41
74,540	5,216	6,376	-----	-----	-----	5,378	190	107,913	9.62
461,540	10,316	3,151	-----	-----	1,050	65,662	1,610	796,992	54.48
68,540	4,416	-----	79	-----	950	25,622	55	124,183	12.02
448,440	3,841	-----	-----	-----	-----	134,822	8,345	740,193	25.42
220,940	1,616	-----	-----	-----	-----	44,022	1,600	390,826	24.47
1,116,540	48,916	13,831	1,954	-----	2,400	418,742	4,760	1,887,991	22.10
540,140	13,616	4,786	29	-----	1,600	98,422	2,190	996,206	25.97
1,603,640	119,016	14,536	654	-----	2,400	502,462	7,930	2,564,941	23.29
173,340	816	61	-----	-----	800	21,984	1,640	295,637	22.24
55,440	1,816	186	-----	-----	-----	25,622	185	107,247	11.30
493,340	4,316	111	-----	-----	100	112,982	165	744,552	25.25
55,440	-----	86	-----	-----	150	11,737	-----	108,563	10.75
1,552,640	157,016	37,261	1,304	-----	2,000	464,062	1,590	2,675,727	17.66
382,940	20,766	6,786	54	-----	250	131,182	6,375	744,438	18.71
435,340	19,316	2,861	654	-----	2,900	378,702	-----	983,241	28.24
5,192,540	72,216	136	654	-----	600	330,242	2,230	5,732,988	26.23
1,168,940	45,916	18,036	54	-----	150	327,742	10,305	1,753,276	23.49
225,740	-----	29	-----	-----	-----	25,622	1,810	454,854	25.14
128,240	2,016	436	-----	-----	850	249,662	6,525	543,104	23.11
120,940	-----	-----	-----	-----	-----	51,102	-----	259,270	13.82
324,340	1,016	236	-----	-----	-----	85,212	4,750	466,472	22.41
382,940	-----	262	-----	29	750	125,782	155	690,565	29.81
369,840	9,016	511	654	-----	2,350	35,862	1,620	551,251	15.23
1,142,740	22,716	736	579	-----	-----	407,822	6,585	1,869,403	21.38
3,200	815,240	12,416	1,036	579	1,600	210,800	6,355	1,423,704	22.94
-----	1,037,940	8,315	10,811	104	800	100,442	8,160	2,343,526	25.77
-----	147,140	4,016	186	104	100	41,262	6,345	245,096	11.95
\$10,050	\$90,002,500	\$3,539,103	\$380,483	\$60,620	\$81,925	\$28,436,953	\$301,500	\$150,070,738	\$22.93

DIVISION OF TUBERCULOSIS

GEORGE THOMAS PALMER, M. D., *Acting Chief*

For a number of years past, the State Department of Health has stood definitely for a policy of cooperation between governmental and extra-governmental agencies in all public health work. It is doubtful, however, if so satisfactory a degree of cooperation had been attained in any of the activities of the department as in those devoted to the prevention, suppression and cure of tuberculosis.

The assistant director of the department has served for many years as president of the Illinois Tuberculosis Association, and it has been possible during the past three years for the State association and the State Department of Health to agree upon one definite State tuberculosis program which has been carried out jointly by the two organizations.

In many desirable activities, the Division of Tuberculosis of the State Department of Health has been without funds and in such cases the State Tuberculosis Association has assumed that portion of the program. It is unquestionably true that this thoroughgoing cooperation between the State Government and extra-governmental agencies has been largely responsible for the remarkable progress made in Illinois which has attracted the attention of public health authorities and tuberculosis workers throughout the Nation.

The Illinois tuberculosis program has included the following activities:

1. The establishment of county tuberculosis sanatoria in all of the counties of the State, under the provisions of the Illinois County Tuberculosis Sanatorium Act. The law provides that these county sanatoria may be equipped at public expense with free tuberculosis clinics and visiting nurse service.
2. The stimulation of interest on the part of the medical profession in the diagnosis of early tuberculosis, to which end there has been maintained an efficient clinical consulting staff whose members have held clinics in cooperation with county medical societies in practically all of the counties of the State. This clinical service, in many instances, has resulted in the establishment of permanent clinics manned by efficient physicians and supported by private funds.
3. The establishment of public health or community nursing service maintained by private funds. Such services are now established in a majority of the counties of the State.

4. Child welfare activities, particularly in the public schools, including the enrollment of over 500,000 school children in Illinois in the organization known as "Modern Health Crusaders," and the stimulation of physical examination of school children, the weighing and measuring of school children, the establishment of nutrition classes and the development of open air schools and open window rooms.

5. The development of local tuberculosis associations, one of which is now more or less active in every county in the State. These local associations carry out various activities and are financed for the most part by the sale of Christmas Seals and health bonds through the Illinois Tuberculosis Association and the National Tuberculosis Association.

6. Tuberculosis surveys have been made in the majority of the counties of the State, primarily for the purpose of impressing upon the public the importance of the local tuberculosis problem as a forerunner to the submission to the people of the proposition of establishing county tuberculosis sanatoria or to the establishment of clinical and nursing service at private expense.

7. A comprehensive educational campaign keeping constantly before the public the importance of the tuberculosis problem, not only as it affects the prevention and suppression of this particular disease, but in its relationship to all phases of social and public health activity.

While much of the credit for the successful carrying out of this program is due to the Illinois Tuberculosis Association and to the generous spirit which has always marked the cooperation of that association with the State Department of Health, there are a number of functions necessarily performed by the State Department of Health itself which are contributing materially to the reduction of tuberculosis mortality and tuberculosis morbidity in Illinois. These include the following:

1. The examination of all plans of county tuberculosis sanatoria under the provisions of the County Tuberculosis Sanatorium Act, requiring that all premises used for sanatorium purposes shall first be approved by the State Department of Health.

2. The inspection of sanatorium sites with special attention to sanitary installation. This work has been done in conjunction with the Division of Sanitary Engineering.

3. The inspection of buildings, plants and sites purchased for sanatorium purposes with special reference to their fitness for such purposes, their sanitary installations, their fire hazards and other essential factors in sanatorium operation and equipment.

4. The inspection of existing municipal and county tuberculosis sanatoria and their rating or grading by a score card system for the purpose of placing in the hands of the public officials and the general public the relative standing of public and private institutions for the treatment of tuberculous persons.

5. The preparation of standard rules and regulations for the control of public tuberculosis sanatoria and the preparation of standard blanks and forms necessary to the carrying out of the provisions of the county tuberculosis sanatorium law.

6. The enforcement of the rules and regulations for the control of pulmonary tuberculosis, and the encouragement of the reporting of all known or suspected cases of tuberculosis to local health authorities by physicians, attendants, nurses, householders or any other persons.

7. The care and treatment of returned tuberculous soldiers, sailors, marines and nurses, and the following up of these persons after dismissal from sanatoria through notification of local health authorities and visiting nurse services.

I. COUNTY TUBERCULOSIS SANATORIA

Until the year 1917, Illinois had less satisfactory facilities for the care of its tuberculous citizens than any other of the larger states of the Union. The State had not established State tuberculosis sanatoria and, up to that time, there was no provision for the establishment of county tuberculosis sanatoria. The Forty-ninth General Assembly, however, enacted a county tuberculosis sanatorium law which is regarded as one of the most satisfactory in effect at the present time in any part of the United States. The law does not make the establishment of county tuberculosis sanatoria mandatory upon the county, but permits any group of citizens, numbering 100 or more, to petition the county board of supervisors or county commissioners to submit to the people by referendum the proposition of establishing such a sanatorium and of levying a special tax therefor. It then becomes mandatory upon the county board to submit the petition to the voters. The law is so written that there may be established, in connection with such tuberculosis sanatoria, free tuberculosis dispensaries and visiting nursing service. The Attorney General of Illinois has also held that even after the sanatorium proposition has been successfully carried, it is not mandatory upon the people actually to erect and maintain a sanatorium. The county tuberculosis sanatorium board upon being created, may lawfully spend funds derived from the sanatorium tax for the care of persons in existing public or private sanatoria. The law is specific, however, in providing that the benefits derived from the county tuberculosis sanatorium funds shall be utilized for rich and poor alike, the law being no more regarded as a

matter of philanthropy or charity than a law for the creation of the free schools of the State. Another commendable feature of the law is that county tuberculosis sanatoria cannot be built upon the grounds of a county almshouse and further, that no one having to do with a county almshouse can be connected in any way with the management of a county tuberculosis sanatorium.

Within the past few years, the county tuberculosis sanatorium proposition has been submitted in almost 50 of the 101 counties of the State, outside of Cook County, and in every instance save two, the proposition has carried by overwhelming majorities. In one of the counties of very small population and where no educational work had preceded the election, the measure was beaten, and, in another county, the measure was defeated on account of the faulty manner in which the ballot had been prepared. In this latter county, however, the measure later succeeded in passage and at the present time a sanatorium building, costing approximately \$150,000 has been purchased and will soon be ready for occupancy.

As these pages are written, a number of public sanatoria are in operation, several more are in the process of construction in spite of the difficulties attendant upon extensive building at the present time, while plans are prepared for others, and still others are under serious contemplation.

Municipal sanatoria created under the provisions of the municipal sanatorium law, enacted in 1915, are now in operation in Chicago, Rock Island, Peoria and Rockford. It is very likely that the municipal sanatorium at Rock Island will be abandoned for the establishment of a Rock Island County sanatorium.

Of the county tuberculosis sanatoria, those now in operation are "Fairview," McLean County tuberculosis sanatorium at Normal; Adams County tuberculosis sanatorium at Quincy; and the LaSalle County tuberculosis sanatorium at Ottawa. In DeKalb County a small sanatorium is now in operation at DeKalb and plans are being pushed for erection of more extensive buildings.

Among the county sanatoria actually under process of construction are the Morgan County sanatorium at Jacksonville; the Tazewell County tuberculosis sanatorium at Mackinaw; the McDonough County tuberculosis sanatorium at Bushnell; the Woodford County tuberculosis sanatorium at Minonk and the Kane County sanatorium at North Aurora.

The counties which have voted favorably on the county tuberculosis sanatorium proposition up to this time are as follows:

Adams.	Jackson.	Ogle.
Boone.	Jefferson.	Piatt.
Bureau.	Kane.	Pike.
Champaign.	Knox.	Randolph.
Christian.	LaSalle.	Rock Island.
Clark.	Lee.	Scott.
Clay.	Livingston.	Shelby.
Coles.	Logan.	Stephenson.
Crawford.	McDonough.	Tazewell.
DeKalb.	McLean.	Vermilion.
DeWitt.	Macon.	Whiteside.
Douglas.	Madison.	Will.
Fulton.	Marion.	Winnebago.
Grundy.	Montgomery.	Woodford.
Henry.	Morgan.	

Of these, the major portion have levied a tax and if not actually proceeding with the construction of a sanatorium, are making provision for their tuberculous people at public expense in existing public or private institutions.

A considerable number of these counties have already established permanent tuberculosis dispensaries, either with or without visiting nurse service, and it is anticipated that, within the next few years, practically all of the counties in the State of Illinois will have voted favorably on the tuberculosis sanatorium proposition and will have established free diagnostic service with the necessary visiting or community nurses.

II. STANDARDIZING ILLINOIS SANATORIA

For the purpose of attaining the highest degree of efficiency in the equipment and operation of public sanatoria in Illinois, the State Department of Health during the past year has carried out an inspection of all county and municipal sanatoria, rating these institutions by the employment of a score card which had received the approval of the National Sanatorium Association and the National Tuberculosis Association.

In making these inspections and ratings the State Department of Health was fortunate in securing the cooperation and financial assistance of the Illinois Tuberculosis Association and also of obtaining the services of Dr. W. H. Watterson, tuberculosis officer for the Eighth District of the Federal Board for Vocational Education, and a man who has had wide and varied experience in institutional work. Dr. Watterson, a number of years ago, established a small private tuberculosis sanatorium at Waukegan. He was later employed as medical superintendent in a private sanatorium in Minnesota, and later was connected in an important capacity with the Cook County Tuberculosis Sanatorium at Oak Forest and with the Chicago Municipal Tuberculosis Sanatorium. Since that time, in his connection with the Federal Board for Vocational Education, he has inspected a large number of institutions. This experience gave to Dr. Watterson an exceedingly broad vision in all types of institutions, including the little pioneer sanatorium with meagre

equipment, the high classed and expensive sanatorium and the large public institutions.

The inspections made during the past year by Dr. Watterson for the State Department of Health included only the public sanatoria over which the department is given a certain measure of jurisdiction by the Civil Administrative Code. In rating these institutions, on a basis of 100 points, the following weights, approved by the National Tuberculosis Association, were allowed: Location and site 3.0; plant and equipment 5.0; business and domestic management 18.0; medical and nursing service including care of patients 74.0.

In the arrangement of the score card, which was adopted from that approved by the National Sanatorium Association with certain modifications deemed necessary in Illinois, a certain degree of latitude was accorded the inspector for the purpose of determining the actual character of service rendered in the various institutions.

While a reasonable amount of credit was accorded an institution for the maintenance of well equipped laboratories, evidence was required that these laboratories were actually employed in every day work to obtain full credit. For example, an institution having large and well equipped X-ray laboratories, but whose records show that very few X-ray plates were made, was not rated as high as the institution which maintained no X-ray laboratories of its own, but which utilized to a considerable extent the services of an outside laboratory. In this respect, credit was also given for the ability of the X-ray technician to interpret his plates properly, this being regarded infinitely more important to the welfare of the patients than the mere possession of X-ray equipment.

In placing a rating upon the efficiency of medical treatment in the institution, the employment of such modern methods as artificial pneumothorax was given favorable consideration, but, on the other hand, when it was apparent that artificial pneumothorax was employed excessively or injudiciously, the institution was penalized, rather than credited.

It was definitely understood that in the first rating of Illinois public tuberculosis sanatoria, the scores would not be made public, but would be communicated to the boards of sanatorium trustees and other institutional authorities with a full explanation of the ratings, so that the inspection should have a full measure of educational value. For this reason the credits and ratings of Illinois sanatoria are not made public at this time, but it may be stated that the prevailing faults detected in the existing Illinois institutions, may be grouped as follows:

(a) Failure to appreciate that tuberculosis constitutes a distinct medical specialty and the consequent employment in public tuberculosis sanatoria of medical directors or attending physicians inadequately trained in tuberculosis work.

(b) Unsatisfactory methods of diagnosis.

(c) Failure to provide tuberculosis dispensaries for the detection of cases suited to sanatorium care and failure to provide dispensary and nursing service for sanatorium patients after discharge from their several institutions.

(d) Misinterpretation of the aims of the county tuberculosis sanatorium law and the care of patients in the spirit of public philanthropy or charity.

(e) Failure to employ properly trained and qualified nurses, especially those having tuberculosis experience.

It is expected that a second inspection and rating of public Illinois sanatoria will be made in the near future, in which case the results of these inspections will be open to the public so that public officials and the people as a whole may be properly guided in the selection of institutions and so that the people of the several counties may be fully advised as to the relative efficiency of the institution which they maintain.

It is also seriously under consideration to make a similar inspection and rating of all of the private tuberculosis sanatoria in the State. In making this latter inspection the State Department of Health will not insist upon its right or authority, but will make it optional with the private institutions as to whether or not such inspection is desired. It is believed that the sanatoria of the better class will welcome this service from the department, and that it will result in very great improvement in all of the institutions of the State.

During the past year, a great deal of time has been devoted by the Division of Tuberculosis to passing upon plans and specifications of proposed sanatoria and in inspecting buildings and premises purchased for sanatorium purposes. In this very important work the division has received valuable assistance from the Division of Sanitary Engineering which has conducted numerous investigations and studies of sanitary installation, providing the plans for water supply and sewage disposal and drainage.

The Division of Tuberculosis has also been engaged, at the instance of county tuberculosis sanatorium boards, in preparing rules and regulations for the operation of county tuberculosis sanatoria and forms and blanks necessary to carry out the provisions of the county tuberculosis sanatorium law.

On account of adverse legal decisions and conflicting opinions of legal counsel, it has been necessary to carry on voluminous correspondence in the guidance of county tuberculosis sanatorium boards, especially those counties where the proposed sanatorium tax was in excess of the constitutional tax limit. In some instances, it has been necessary to recommend the resubmission of the proposition to the people to secure authority for the levying of the excess tax, and in such cases the division has rendered every possible assistance in making preparations for cam-

paigms, while the Illinois Tuberculosis Association has undertaken the field work essential to the successful carrying out of such campaigns.

III. EXTENSION OF CLINICAL SERVICE

Recognizing the necessity of securing the thoroughgoing coopération of the medical profession and of stimulating the interest of physicians in the early diagnosis of tuberculosis, the Division of Tuberculosis has cooperated with the Illinois Tuberculosis Association in the establishment of a clinical consultant service which is said to be the most efficiently conducted of any similar service in the United States. A clinical consultant staff made up of seven of the best known tuberculosis experts in Illinois, and headed by the acting chief of the Division of Tuberculosis, and by Dr. Russell E. Adkins, director of Medical Field Service of the Illinois Tuberculosis Association, has conducted 154 clinics in 102 communities of the State, covering 61 counties during the past year. These clinics have all been conducted with the cooperation of county medical societies and the attendance on the part of the medical profession has been very gratifying. In many instances it was found that the attendance of physicians at these clinical meetings had been greater than that of any local medical society meeting for a period of five years past. In one community where, five years ago, it was impossible to induce any persons suspected as being tuberculous to present themselves for examination, seventy-four patients were found in the clinic waiting room at one time, while fourteen of the twenty physicians located in the county remained in attendance upon the clinic from early morning until late in the evening. It is generally recognized that this clinical service has been an enormous stimulus to the interest taken in tuberculosis work by the physicians of Illinois.

In connection with the care of returned sick and wounded tuberculous soldiers, sailors, marines and nurses, of whom there are approximately 3,000 in Illinois at the present time, the United States Public Health Service designated one physician in each county as a local medical examiner and also appointed other physicians as acting assistant surgeons and as consulting specialists. It is asserted that while the medical service accorded by the Federal Government to service men and women was for the most part satisfactory, there was a distinct need for special training of physicians in the diagnosis and treatment of those suffering from tuberculosis. For this reason the United States Public Health Service decided to establish, in a number of localities throughout the United States, schools for the diagnosis of tuberculosis designed for medical men attached to their service. In the establishment of the school in Illinois, it was decided that Springfield afforded the most suitable point on account of the large clinical facilities and on account of the cooperative assistance which could be rendered by the State Department of Health. The school was accordingly established in Spring-

field, in conjunction with the Palmer Tuberculosis Sanatoria, the Springfield Tuberculosis Association and the laboratories of the State Department of Health and, a little later, when a similar school established in Wisconsin had been abandoned, the Springfield school was made the Federal Service School for the States of Illinois and Wisconsin. The course extended over a period of seven days with three sessions each day and proved so successful that in all likelihood it will be conducted as a permanent institution, either by the United States Public Health Service or jointly by the Illinois State Department of Health and the Illinois Tuberculosis Association.

IV. TUBERCULOSIS WORK AMONG SCHOOL CHILDREN

It is now generally recognized that tuberculosis among adults is for the most part dependent upon infection occurring during childhood, one authority going so far as to say that all such infection occurs prior to the sixth year of life. Whether or not this assertion is too sweeping, it is generally accepted that all tuberculous disease is more or less dependent upon childhood infection; that perhaps 80 per cent of the adult population show evidence of tuberculous infection which does not manifest itself as a distinct disease until something arises in the life of the individual which lowers his resistance. On this account work among school children has become an exceedingly important part of tuberculosis work, and the Illinois program for the prevention and suppression of tuberculosis has included a large amount of such child welfare activities although, for the most part, this work has been delegated in the joint program to the Illinois Tuberculosis Association.

It is stated that at the present time there are over 500,000 Illinois school children enrolled in an organization known as the "Modern Health Crusaders." This organization, fostered by the National Tuberculosis Association, not only carries out an educational campaign on general health in the schools, but imposes upon each of its members an obligation actually to live a wholesome life. The individual school child is regularly graded and scored on his performance of the health program, while the individual school rooms are graded on their percentage in health efficiency. In this way the individual child is not only interested in living a wholesome life so that he may attain a high personal score, but he is jealous of the conduct of his associates lest their carelessness lower the standing of the school room or of the school.

Included in the program of the modern health crusaders is the work of weighing and measuring school children, coupled up closely with the physical examination of pupils and the functions of the school nurse. The weighing, measuring and examination of school children, through the Illinois tuberculosis program, has brought to light scores of children physically below par who are in need of special nourishment or of unusual provision for their school care.

The Division of Tuberculosis, working in conjunction with the Illinois Tuberculosis Association, has constantly advocated the establishment of open air schools or open window rooms in all schools in Illinois, and it is contemplated that this educational program will be carried out to such an extent that there will be provision for the undernourished or physically subnormal child in all parts of the State during the next few years.

The Illinois Tuberculosis Association has established a working relationship with the Illinois Council of Parent-Teacher Associations whereby the Illinois school tuberculosis program has been made the essential health program of parent-teacher organizations, and as these lines are written, a future cooperative arrangement has been entered into with the Elizabeth McCormick Memorial Fund whereby special nutrition classes will be financed with Christmas Seal funds in every county in the State during the coming year. The Illinois Tuberculosis Association has designated one of its most competent nursing supervisors to the special field of nutrition work. During the coming year, the Division of Child Hygiene and Public Health Nursing of the State Department of Health will doubtless lend all possible assistance to the Division of Tuberculosis, the Illinois Tuberculosis Association and the Illinois Council of Parent-Teacher Associations to bring about the first definite and coordinated activity among school children that has been carried out on a state-wide basis.

It is stated over 60 per cent of the county superintendents of schools throughout Illinois have announced that their teachers may receive special credits in their professional records for all modern health crusade work in which they are engaged.

V. ESTABLISHING NURSING SERVICE

For a period of over ten years, the Illinois Tuberculosis Association has been the one organization in Illinois interested in the establishment of community nursing service. It is stated that there are a few communities in the State where public health nursing, tuberculosis nursing, child welfare nursing or school nursing is now in operation in which the tuberculosis agencies have not taken the initial step in establishing such services. The Illinois Tuberculosis Association has nursing service in its affiliated organizations in 60 of the 102 counties in the State, while funds are on hand in local treasuries for the employment of many more nurses who could not be obtained on account of the unusual demands and shortage of nurses during the past few years.

The Division of Tuberculosis has cooperated closely with the Illinois Tuberculosis Association in the establishment of local nursing service and, while the supervision of nursing service will in the future be turned over very largely to the Division of Child Welfare and Public Health Nursing under the provisions of a contract with the American Red Cross

and the State Tuberculosis Association, to which reference has been made heretofore, the Division of Tuberculosis will continue to interest itself, not only in the establishment of general community nursing service, but in the employment of special tuberculosis nurses in all of those communities in which sanatoria are established or in which it is deemed expedient to maintain special tuberculosis dispensaries. The State Department of Health, working jointly with the Illinois Tuberculosis Association, will employ a supervisor of tuberculosis nursing who will be affiliated with the Division of Child Welfare but who at the same time will be responsible to and work in close connection with the Division of Tuberculosis.

During the past year, the Chicago School of Physics and Philanthropy, in the maintenance of their classes for public health nurses, have insisted that these nurses devote at least one month to actual field service under supervision, and the Illinois Tuberculosis Association has been asked to assign these nurses, who are for the most part women of special training and ability. It has been the policy of the Illinois tuberculosis program to place these women in groups of counties where nursing service has never been established in the past, and where they will be so situated as to make constant supervision by the supervising nurses entirely practicable. The nurses are furnished for a period of one month without cost to the community and the results of the experiment have been most gratifying. In many instances the communities had no previous intention of establishing a permanent nursing service, and for the most part, these women have had no intention of remaining in rural communities. As a result of the one month of employment, most of the communities have decided to establish a permanent nursing service, and, in the majority of instances, the nurses have decided to remain in the communities in which they were originally employed.

Unfortunately the Chicago School of Physics and Philanthropy, in being taken over by the University of Chicago, has decided to discontinue its course for public health nurses. In view of this fact it appears that there is an urgent need for the State of Illinois to make provision for the training of community nurses in one way or another. It has been suggested that a short course for community nurses be established in connection with the University of Illinois, with the cooperation of the State Department of Health, the Illinois Tuberculosis Association, the American Red Cross and other governmental and extra-governmental agencies. It is quite conceivable that this course may be established in connection with the medical department of the University of Illinois, now in process of development, in the city of Chicago, but it is believed by those of wide experience that a large part of the instruction should be given either at Urbana or Springfield so that the graduates may be especially qualified to deal with the nursing problems of the smaller communities of the State.

VI. COUNTY TUBERCULOSIS SURVEYS

In every county in which one of the nurses of the Chicago School of Physics and Philanthropy was placed by the Illinois Tuberculosis Association, an intensive tuberculosis survey of the county was made. In some instances these surveys were made in connection with general health surveys conducted by the Division of Surveys and Rural Hygiene of the State Department of Health, but in others, the tuberculosis surveys were made by the community nurse working alone or in cooperation with the local tuberculosis association.

These surveys have brought home to the people the magnitude of the tuberculosis problem and have impressed upon every county the need for sanatoria, dispensaries and nursing service.

It has been demonstrated in the Framingham experiment, at Framingham, Massachusetts, financed by the Metropolitan Life Insurance Company and carried out by the National Tuberculosis Association, that there are 20 tuberculous persons to every annual death in any community. The Framingham experiment has been the most carefully executed piece of community work ever carried out in the United States, and the conclusions derived from it are regarded as conservative and sound. In view of the findings of the Framingham experiment, and in view of the number of deaths from tuberculosis unearthed in the many local surveys that have been conducted during the past year, one must be impressed that the tuberculosis problem of Illinois is one of greater magnitude than has ever been conceived in the past.

VII. CARE OF RETURNED TUBERCULOUS SOLDIERS

The Division of Tuberculosis of the State Department of Health and the Illinois Tuberculosis Association, take pride in the fact that, before any other agency began to function, these two organizations in their coordinated program, began to make provision for the soldiers, sailors, marines and nurses who returned to their homes in Illinois suffering from pulmonary tuberculosis. Before the American Red Cross was prepared to meet the need and before the United States Public Health Service had been authorized by law to make provision for returned soldiers, the Illinois Tuberculosis Association and the State Department of Health had begun the location and examination of men discharged from service on account of a suspicion of tuberculous disease, and had influenced many of the counties to meet the expense of sanatorium care for these unfortunate persons.

While the American Red Cross has assumed a larger and larger burden in making provision for returned soldiers, and while the Congress of the United States has authorized the United States Public Health Service to give sanatorium and other care to these persons, the Illinois Tuberculosis Association and the State Department of Health have continued their activities, contributing materially to the relief of service

men and women. By a constant program of stimulating the development of as many sanatorium beds as possible; by urging all returned soldiers, sailors, marines and nurses to attend the scores of clinics which have been held throughout the State; by keeping the United States Public Health Service and the Red Cross advised of every tuberculosis case for whom definite provision had been made, and by seeking out through local associations and nursing service all soldiers who might possibly be in need of care, the Division of Tuberculosis and the Illinois Tuberculosis Association have rendered a definite service which has received official recognition and earnest commendation.

RECOMMENDATIONS

The Division of Tuberculosis, basing its judgment upon its experience in the past, makes definite recommendations along the following lines:

(1) That the rules and regulations of the State Department of Health for the control of tuberculosis be so modified as to impress upon local health authorities that tuberculosis is not to be dealt with in the same manner as the several acute contagious and infectious diseases. The impression that tuberculosis is particularly infectious among adults and particularly that the trained and careful consumptive is a source of grave danger, have been relegated to the past by modern students of the disease. It is the opinion of the division that a public policy of rigid isolation of ordinary tuberculosis patients or any attempt of rigid quarantine is a mistake and that the question of forcible isolation of any save viciously careless consumptives, should be approached with the utmost reluctance. It is the opinion of the division that local health authorities will make far more progress in the prevention and suppression of tuberculosis if they approach the individual tuberculous patient with the idea of education rather than stringent and mandatory action.

(2) In view of the fact that tuberculosis among adults is almost invariably due to childhood infection and in view of the fact that tuberculosis is an extremely infectious disease to children, the Division of Tuberculosis recommends that the State Department of Health, in the promulgation of rules and regulations and in its educational campaigns, shall lay special stress upon the danger of childhood infection and shall institute all reasonable means to remove all children from contact with tuberculous persons.

(3) It is urged that all public sanatoria for the care of tuberculous persons be provided with quarters for the housing and care of the children of tuberculous parents or other children who must otherwise be in contact with open cases of pulmonary tuberculosis. Such preventoria will serve as a means of saving scores of persons from tuberculous disease who would otherwise necessarily become its victims.

(4) The Division of Tuberculosis recommends that the personnel of the Division be materially strengthened during the next biennium. During the past three years the division has been enabled to participate in a constructive program which would have been impossible without the thoroughgoing cooperation of extra-governmental agencies. The Division believes that it is the function of extra-governmental health organizations to carry out pioneer work until they have been able to demonstrate to the public the extent and necessity for such work, whereupon it becomes the part of wisdom for the people themselves to assume the burden of such programs. The Illinois Tuberculosis Association will always prove a valuable ally to the State Department of Health, but should be permitted to engage its resources and its funds in more advanced steps in the study and prevention of tuberculosis, leaving to the State Department of Health the carrying out of those measures already demonstrated as essential to the public as a whole.

DIVISION OF ENGINEERING AND SANITATION

HARRY F. FERGUSON, *Acting Chief Sanitary Engineer*

The activities of the Division of Engineering and Sanitation are regulated by the authority given the Department of Public Health and by special provisions in the following sections of article 55 of the Civil Administrative Code:

3. To act in advisory capacity relative to public water supplies, water-purification works, sewerage system, and sewage-treatment works, and to exercise supervision over nuisances growing out of the operation of such water and sewage works, and to make, promulgate and enforce rules and regulations relating to such nuisances;

4. To make such sanitary investigations as it may, from time to time, deem necessary for the preservation and improvement of public health;

5. To make examinations into nuisances and questions affecting the security of life and health in any locality in the State;

6. To maintain chemical, bacteriological and biological laboratories, to make examinations of milk, water, sewage, wastes, and other substances, and to make such diagnosis of diseases as may be deemed necessary for the protection of the people of the State;

9. To make investigations and inquiries with respect to causes of disease, especially epidemics.....and to make such other sanitary investigations as it may deem necessary for the preservation and improvement of the public health;

13. To enlist the cooperation of organizations of physicians and other agencies for the promotion of the public health in the improvement of health and sanitary conditions throughout the State;

14. To make sanitary, sewage, health and other inspections and examinations for the charitable, penal and reformatory institutions and the normal schools;

15. To inspect, from time to time, all hospitals, sanatoria, and other institutions conducted by county, city, village or township authorities, and to report as to the sanitary conditions and needs of such hospitals, sanatoria and institutions to the official authority having jurisdiction over them;

16. To print, publish and distribute documents, reports, bulletins, certificates, and other matter relating to the prevention of diseases and the health and sanitary condition of the State.

In section 2 of article 21 of the act creating the State Board of Health, the following powers and duties were invested in the State Board of Health: "The board shall have authority to make such rules and regulations and such sanitary investigations as they may from time to time deem necessary for the preservation and improvement of the public health * * *." On the basis of this authority, which by section 1 of article 55 of the Civil Administrative Code is now vested in the State Department of Public Health, the following rules relating to public water supplies, sewerage systems, and ice supplies were adopted

at a meeting of the State Board of Health on April 5, 1916, and became immediately effective:

Rule 1. No municipality, district, corporation, company, institution, person or persons shall install, or enter into contract for installing, waterworks or sewers to serve more than 25 persons until complete plans and specifications fully describing such waterworks or sewers, have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications must be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 2. No municipality, district, corporation, company, institution, person or persons shall make or enter into contract for making any additions to, or changes or alterations in, any existing waterworks serving more than 25 persons, when such additions, changes, or alterations involve the source of supply or means for collecting, storing, or treating the water, until complete plans and specifications fully describing proposed additions, changes or alterations have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications must be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 3. No municipality, district, corporation, company, institution, persons or person shall make, or enter into contract for making, alterations or changes in or additions to any existing sewers or existing sewage-treatment works, serving more than 25 persons, until complete plans and specifications fully describing such alterations, changes or additions have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications must be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 4. Any municipality, district, corporation, company, institution, persons or person, owning or operating a water-purification works or sewage-treatment works, shall submit to the State Board of Health monthly records showing clearly the character of effluents produced.

Rule 5. No municipality, district, corporation, company, institution, person or persons shall offer lots for sale in any subdivision, unless within the boundaries of an area incorporated as a municipality or sanitary district, until complete plans and specifications for sewerage, drainage and water supply have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications shall be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 6. No natural ice shall be furnished or vended to the public for domestic purposes until the source of the ice supply has received the written approval of the State Board of Health, which approval is revocable upon evidence being presented or discovered of undue contamination entering the source.

The activities of the Division of Engineering and Sanitation are carried out in accordance with the foregoing rules and the foregoing provisions of the law.

PERSONNEL OF THE DIVISION

With the slightly increased appropriation authorized by the Fifty-first General Assembly, it was possible to increase the staff temporarily by the addition of two assistant engineers and an assistant analyst. During the year, however, the division has suffered the loss of Mr. Paul

Hansen, who had been chief engineer since the creation of the division in 1915, and who resigned May 15 to enter private practice. Moreover, during the year, because of the limited funds available and the consequent inability to meet the larger salaries offered elsewhere, the division has lost the services of three assistant engineers. The maximum staff of the division at any time comprised a chief engineer, five assistant engineers, one analyst, one assistant analyst, a laboratory helper, and three stenographers. At the close of the fiscal year the division was short three assistant engineers.

ACTIVITIES OF THE DIVISION

The activities of the Division of Engineering and Sanitation, as regulated and prescribed by the Civil Administrative Code and by the rules adopted by the department under the authority of the code may be classified as follows:

1. Investigation and approval of proposed new or improved public water-supply projects and examination of and advice relative to existing public water supplies, including water-purification plants.
2. Investigation and approval of proposed new or improved public sewerage projects, including sewage-treatment plants, and examination of and advice relative to existing sewer systems including sewage-treatment plants.
3. Investigation of stream pollution.
4. Investigation of methods for the purification of sewage and industrial wastes.
5. Examination and certification of water supplies for use on common carriers in cooperation with the United States Public Health Service.
6. Sanitary surveys of municipalities in cooperation with the Division of Surveys with special reference to water supply, sewerage, street cleaning, city wastes collection and disposal, and mosquito eradication.
7. Examination and approval of proposed municipal plumbing ordinances as required under the State law relative to licensing of plumbers and supervision of plumbing.
8. Investigation of nuisances.
9. Investigation of diseases that may be water-borne, such as typhoid fever and enteritis, in cooperation with the Division of Communicable Diseases.
10. Investigation of sites for tuberculosis sanatoria with special reference to water supply, sewage disposal, and drainage, as a basis for approval of such sites as required under the State law.
11. Investigation of sanitary condition of school buildings.
12. Studies of city waste collection and disposal and street cleaning.
13. Studies and advice on malaria control by mosquito eradication.
14. Sanitation of common carriers and construction camps.
15. Inspection of summer resorts.
16. Examinations of public swimming pools and bathing beaches.
17. Laboratory service.
18. State House drinking water supply.
19. Educational work by means of publications, addresses, exhibits, and correspondence.

Full attention has been given to the more important work and a certain amount of work in connection with all the enumerated activities has been carried on. Much of the work the division has been able to do

only to a limited extent is of importance to the health and welfare of the State and sooner or later sufficient funds should be granted to carry on such work if Illinois desires to render the same service to its citizens as that afforded in some of the other states.

Reports have been prepared on all the investigations and examinations made during the year, and copies of these reports are retained in the departmental files and also sent to interested parties. Many of these reports would be of value if published and it is hoped, therefore, that rather complete abstracts of the reports can at some time in the future be published and made available for the use of engineers and sanitarians. These reports give information regarding public water supplies, sewer systems, and various other matters of sanitary importance.

WATER SUPPLIES

A public water supply of good sanitary quality and adequate in quantity is undoubtedly the most important public improvement any municipality can undertake. Such an improvement not only is of prime importance as regards the health of the community, but is of great importance from the standpoint of convenience and fire protection. If there is no public supply, then persons must generally depend upon private wells which experience has shown cannot be maintained in satisfactory condition in a built-up community. When a public water supply of questionable quality is available, it is a grave source of danger to strangers in the city who are not aware that it is not considered safe, and also to local persons who disregard instructions not to use the water for drinking purposes. Moreover, an unfit public water supply forces individuals to continue the use of private wells yielding waters of questionable purity. Every effort, therefore, is made to have municipalities install public water supplies; to improve supplies of poor quality and inadequate quantity, and to operate existing waterworks systems so as to insure a continued supply of satisfactory water.

PROPOSED NEW WATER-SUPPLY PROJECTS

It is much easier and more satisfactory to have a municipality install a supply of satisfactory quality and quantity, when a water-supply project is under consideration, than attempt to improve an unsatisfactory supply already installed. Special attention, therefore, is given to proposed new projects in order to assist the municipalities in every way possible and to insure that the projects when completed will afford the municipalities satisfactory and adequate water supplies. Field investigations are made to help locate suitable sources of water supply and to advise with municipalities in the development of such sources. It is always recommended that competent engineers experienced in water-supply development be retained, and it is required that plans and specifications, when prepared by the municipalities' engineers, be submitted for review and approval. These activities not only tend to prevent the

installation of inadequate systems, but, in carrying on this work, the division gathers together a large amount of information and data relative to water-supply resources and methods and difficulties of developing and treating different water supplies, which information, in turn, is made available to consulting engineers and municipal officials.

Because of the prevailing high prices, there has been some tendency to delay the installation of new water supplies. Several cities have given consideration to such installations, but have temporarily postponed action.

During the fiscal year, investigations relative to proposed new water supplies were made at the following places: Altamont, Ashland, Burr Oak, Carterville, Dallas City, Eldorado, Oblong, Toledo, Virden, Westville and Witt.

PROPOSED IMPROVED WATER SUPPLIES

Many public water supplies in the State were installed primarily for fire protection, flushing and street-sprinkling purposes, and little thought was given, in their installation, to their use for domestic purposes. Other supplies have been installed with the ultimate aim of using them for all purposes but, because of lack of funds, suitable treatment works could not be installed at the start which would render these supplies at all times of satisfactory quality. From the health standpoint, a public water supply that is not always of good sanitary quality is more dangerous than private wells in a community without a public supply. If a private well becomes contaminated, only a few persons are exposed, but if a public supply becomes contaminated, many may be exposed to water-borne diseases. Every effort is made, therefore, by visits to municipalities, by reports, and by correspondence to urge municipalities having inadequate or unsatisfactory supplies to take necessary action to improve them. In some instances this requires only the installation of a treatment plant and in other instances an entire new supply must be developed. The division aids in this work by means of field examinations similar to those made for new projects.

There is a very apparent desire on the part of many municipalities in the State, having unsatisfactory supplies, to improve them but, as in the case of new projects, improvements have been delayed because of prevailing high prices. In addition to improvements in existing water supplies of poor quality it has been necessary in several instances to consider enlargements of waterworks systems because of growth of municipalities and increased water consumption.

During the fiscal year the following places were visited relative to proposed improvement or enlargement of existing water supplies: Carlinville, Carthage, Danville, DuQuoin, Elgin, Jacksonville, Lake Forest, Litchfield, Marion, Mascoutah, Newton, Princeton, Roodhouse, Rushville and West Frankfort.

EXISTING PUBLIC WATER SUPPLIES

The division has continued making examinations of existing public water supplies and the preparation of complete descriptive reports of such supplies. There are about 475 public water supplies in the State, of which the department has knowledge. Descriptive reports on most of these supplies have been prepared and analyses have been made of samples of water from other places which have not yet been visited. It is the intention to visit the places that have not already been visited, as field examinations often show conditions which cannot be ascertained by a single or even several analyses. This work is carried on as fast as emergency work and other duties permit and many places are visited more than once in order to note improvements or urge improvements which have been found desirable on previous visits.

The department does not have authority to require local officials to remedy any defects noted, but often has been instrumental in bringing about improvements by means of descriptive and advisory reports submitted as result of examinations. In some instances even serious conditions of public water supplies are not corrected when they are pointed out to local authorities, and therefore, the question arises whether it would not be desirable for the State Department of Health to have authority to prohibit the furnishing of a public water supply of unsafe quality or that may become unsafe at any time because of existing conditions.

During the fiscal year, the following places were visited to make examinations of existing public water supplies in addition to those places listed above where improvements were under consideration:

PLACES VISITED TO EXAMINE EXISTING PUBLIC WATER SUPPLIES IN ADDITION TO THOSE PLACES WHERE IMPROVEMENTS WERE PROPOSED

Aledo.	Galesburg.	Pontiac.
Anna.	Hamilton.	Princeton.
Antioch.	Herrin.	Quincy.
Argo.	Highland Park.	Rankin.
Assumption.	Hillsboro.	Rock Island.
Aurora.	Hinsdale.	Rock Island Arsenal.
Avon.	Hoopeston.	Salem.
Barry.	Joliet.	Savanna.
Bureau.	Kankakee.	Sparta.
Bushnell.	Kewanee.	Spring Valley.
Calro.	Lawrenceville.	Staunton.
Carbondale.	Lombard.	St. Charles.
Carlinville.	Macomb.	Sterling.
Casey.	Manteno.	Streator.
Champaign.	Menard (prison).	Stronghurst.
Charleston.	Mendota.	Sublette.
Chester.	Minonk.	Taylorville.
Christopher.	Moline.	Tinley Park.
Cissna Park.	Momence.	Tuscola.
Congress Park.	Mounds.	Urbana.
Danville.	Mt. Carmel.	Villa Park.
Decatur.	Mt. Vernon.	Warren.
DeKalb.	Murphysboro.	Warsaw.
Dwight.	Neoga.	Washington.
East Dundee.	New Baden.	Watertown.
Effingham.	Odell.	Watseka.
Elgin.	Olney.	West Frankfort.
Eureka.	Oswego.	Wheaton.
Flora.	Ottawa.	Wilmington.
Freeport.	Pana.	
Galena.	Pinckneyville.	

WATER-PURIFICATION PLANTS

A special phase of the examination of existing water supplies is the examination of water-purification plants. Some plants are old or of poor design, but even those plants of good design will not furnish good results unless properly operated. The division, therefore, endeavors to help obtain the best possible results from existing purification plants, even though such plants may be defective, until such time as new purification plants can be built, and also endeavors to follow the operation of the plants that are of good design and generally carefully operated. The number of purification plants has materially increased during the past decade and a still further increase will be necessary before the majority of municipalities in Illinois having public supplies from surface sources will have satisfactory supplies. The places where the public water supplies are treated are given in the tabulation.

SEWERAGE

The public improvement that is probably next in importance to a water-supply system for a municipality is a sanitary sewer system. The installation of such a system makes it possible to eliminate privies, cess-pools, and private drains which are generally filthy, insanitary, and cause nuisances. Privies also are a menace to health because of the possibility of flies carrying infection from them. A sewer system, in addition to bringing about improved sanitary conditions, makes it possible for persons to take full advantage of a public water supply. A number of municipalities have public water supplies, but full advantage of the thousands of dollars invested in them cannot be had because of the lack of adequate sewerage. The division, therefore, endeavors to promote the installation of sewer systems; to control such installations so that they will be satisfactory, and to bring about improvements or enlargements in existing systems. This work is carried on by means of field examinations, reports and correspondence, the same as for public water supplies.

In addition to the examinations made of sewer systems where improvements are proposed or treatment is given, examinations are made of existing sewer systems to ascertain their suitability, the extent to which they are used, and their points of outlets. Many such examinations are made as the result of nuisances arising from defective systems or stream pollution, but some are made as part of complete examinations of public water supplies and general sanitary conditions.

PROPOSED NEW SEWER SYSTEMS

Since the elimination of privies and cesspools brings about greatly improved sanitary and health conditions, and since such elimination cannot be brought about without the installation of sewer systems, it is an important function of the Department of Public Health to give consideration to the installation of these systems. The installation of a

PLACES HAVING TREATED WATER SUPPLIES.

Municipality.	Owner-ship.	Source.	Type of plant.	Chemicals used.
Alton.....	P	Mississippi River.....	S-RSF	LI-H
Anna State Hospital.....		Kohler Creek Reservoir.....	S-RSF	A-H
Aurora.....	M	Wells.....		C***
Breese.....	M	Kaskaskia River.....	S	LI
Cairo.....	P	Ohio River.....	S-RSF	A-H
Carbondale.....	P	Wells.....		C
Carlinville.....	P	Macoupin Creek.....	S-RSF	A-C
Centralia.....	M	Morton Branch Reservoir.....		C
Champaign**.....	P	Wells.....		C
Charleston.....	M	Embarass River.....	S-RSF	A
Chicago.....	M	Lake Michigan.....		C
Christopher.....	M	Impounding reservoir.....		C
Danville.....	P	Vermillion River.....	S-RSF	A-C
Decatur.....	P	Sangamon River.....	S-RSF	A-C
DuQuoin.....	P	Mine.....		C
East St. Louis.....	P	Mississippi River.....	S-RSF	A-C
Effingham.....	P	Little Wabash River.....	S-RSF	A-C
Elgin****.....	M	Wells and Fox Rivers.....	PF	A-C
Evanston.....	M	Lake Michigan.....	S-RSF	A-H
Fort Sheridan.....	US	Lake Michigan.....	PF	H
Freeport**.....	P	Wells.....	S-RSF	L
Great Lakes Naval Station.....	US	Lake Michigan.....	S-RSF	A-C
Hamilton.....	P	Mississippi River.....	S-RSF	A-C
Harrisburg.....	P	Saline River.....	S-RSF	A-C
Herrin.....	M	Hurricane Creek Reservoir.....	S-RSF	A-C
Highland Park.....	M	Lake Michigan.....		C
Hinsdale*.....	M	Wells.....	S-RSF	LN-A
Johnston City.....	P	Lake Creek and wells.....		C
Kankakee.....	P	Kankakee River.....	S-RSF	A-C
Kenilworth.....	P	Lake Michigan.....	S-RSF	A
Lake Forest.....	P	Lake Michigan.....	S-PF	A-H
Lawrenceville.....	P	Embarass River.....	S-RSF	A-C
Macomb.....	M	Crooked Creek.....	S-RSF	A-H
Menard State Prison.....		Springs and Mississippi River.....		C
McLeansboro.....	M	North Fork Saline River.....	PF	A
Moline.....	M	Mississippi River.....	S-RSF	A-C
Mt. Carmel.....	P	Wabash River.....	S-RSF	A-C
Mt. Vernon.....	P	Pond and Casey Fork.....	S-RSF	A-H
Murphysboro.....	P	Big Muddy River.....	S-RSF	A-H
North Chicago.....	M	Lake Michigan.....		C
Pana.....	M	Wells and Becks Creek.....	RSF	A
Peoria***.....	P	Wells.....		C
Pontiac.....	P	Illinois-Vermilion River.....	S-RSF	A-H
Quincy.....	M	Mississippi River.....	S-RSF	A-C
Rock Island.....	M	Mississippi River.....	S-RSF	A-C
Rock Island Arsenal.....	US	Mississippi River.....	S-RSF	A-H
Sparta.....	M	Impounding reservoir.....	S-RSF	A-H
Springfield***.....	M	Wells and Sangamon River.....		C
Streator.....	P	Illinois-Vermilion River.....	S-RSF	A-C
Tuscola.....	P	Wells.....		C
Warsaw.....	M	Mississippi River.....	S-RSF	A-H
Watertown State Hospital.....		Wells.....		C
Waukegan.....	M	Lake Michigan.....		H
Winnetka.....	M	Lake Michigan.....		C

S—Sedimentation. RSF—Rapid sand filter. SSF—Slow sand filter. A—Alum. L—Lime. I—Iron. N—Soda ash. C—Chlorine. H—Hypochlorite.

* Softening only.

** Iron removal.

*** Emergency.

**** Supplemental supply.

sewer system involves the question of the disposal of sewage, and though the pollution of streams is not always a health problem, yet it is a natural sequence to the installation of sewers if the sewage is not properly treated, and thus it is properly a function of the Department of Health to examine into and regulate the manner of construction of sewers and sewage-purification plants.

As in the case of water supplies, it is found easier to have a sewer system installed properly at the start than to bring about corrections or improvements to defective systems. Plans and specifications are, therefore, required to be submitted for review and approval in accordance with the rules of the department. Advice is given as to whether a combined or separate system will be the better for a municipality, and as to what treatment will be required to prevent objectionable stream pollution. Although the division endeavors to advise with municipalities in the installation of sewer systems, it does not attempt to undertake the engineering work but, as in the case of public water supplies, always urgently recommends that competent engineers be retained by municipalities. This activity on the part of the division has at times resulted in preventing installation of systems that would otherwise have been of poor design.

Several projects considered during the year have been delayed because of the high cost of material. During the fiscal year the following places have given consideration to the installation of sewer systems and have been visited and given assistance by this division: Barry, Chatsworth, Crystal Lake, Dallas City, Easton, El Paso, Eureka, Fairbury, LaHarpe, Lemont, Mason City, McHenry, Mt. Carroll, Mt. Morris, Mt. Olive, New Holland, Peoria, Roodhouse and Venice.

PROPOSED IMPROVED SEWERAGE

Some sewer systems in the State require improvement or enlargement because of defective design when first installed, or because the municipalities have outgrown the original installations or the volume of sewage has so increased as to cause objectionable stream pollution. Some municipalities in the State have installed sewer systems piecemeal as occasion demanded, and sooner or later are forced to give consideration to comprehensive sewer systems. Sometimes these improvements can be brought about at nominal cost and, at other times, because of the failure to plan systems properly at the start, considerable expense is involved to correct past defects and to provide for a satisfactory new or improved system.

One of the greatest causes of unsatisfactory sewer systems, especially in the smaller municipalities, is the practice of installing a drainage system originally for storm drainage only, and then, from time to time, allowing house sewers to be connected thereto. Such practice often leads to stream pollution and to flooding of property by sewage-polluted waters.

The division has records of most of the sewer systems in the State and it is the intention to make these complete as opportunity permits. On the basis of these examination records, efforts are made to bring about improved sewer systems. During the past year the following places were visited relative to improved sewerage: Antioch, Bloomington, Chicago Heights, Decatur, DesPlaines, Elgin, Geneseo, Grays Lake, Highland Park, Jacksonville, Kankakee, Mattoon, Mendota, Mound City, Mount Vernon, Pontiac, Streator and Wheaton.

SEWAGE-TREATMENT PLANTS

The question of sewage-treatment plants is a part of proposed new systems or proposed improved systems, but is of such importance that it warrants special consideration. Improper disposal of sewage may be dangerous to health although more often it only indirectly affects health and is more in the nature of a nuisance. Improper disposal of sewage may also be destructive of fish life. The treatment or disposal of sewage, though not always a health problem, is so closely interwoven with health and sanitary conditions that the question of sewage treatment can more properly be handled by the State Department of Health, especially with its technical staff and laboratory facilities, than by any other State agency.

In the installation of new sewer systems, studies are made to ascertain what treatment will be necessary to prevent objectionable stream pollution and the best location for sewage-treatment plants. The consulting engineers for municipalities are cooperated with and the designs for sewage-treatment plants and the final plans and specifications are, in accordance with, the rules of the department, submitted for review and approval. In this way stream pollution is often prevented.

It is often the case that tank treatment alone will be satisfactory when a sewer system is first installed, but that additional treatment will be necessary at a later date, when the volume of sewage has materially increased and, therefore, the division endeavors to see that the first installations are made so that additional treatment works can be added at minimum expense.

In those instances where sewer systems have already been installed and do not include sewage-treatment works and objectionable stream pollution prevails, examinations are made and the municipalities are advised as to what is necessary to remedy the conditions.

Experience has shown that there is a strong tendency among municipalities to neglect the operation of sewage-treatment plants. It is a common, fallacious idea that sewage-treatment works require little or no attention, and consequently they are neglected until objectionable conditions prevail because of odors from the plant or because of stream pollution. Some sewage-treatment plants have been so neglected that

they have become permanently damaged and can be put back into operating condition only at considerable expense.

The division makes inspections of existing sewage-treatment plants, to note their condition and to call the attention of local authorities to any apparent neglect. In pointing out defects in operation, the importance of municipalities engaging competent operators or retaining the engineers who designed the plants to make periodic inspections is emphasized.

The burden of constant control of sewage-treatment plants should not be borne by the State, but rather the municipalities should retain competent engineers to make sufficiently frequent examinations to insure proper operation. The State should, of course, supplement the work of these engineers and employees by periodic inspections of the plants at reasonable intervals to check their operation and give advice which can often be based upon the experiences at other treatment plants.

During the fiscal year, the following places were visited relative to existing sewer systems and the operation of existing sewage-treatment plants in addition to those places visited where enlargements or improvements were under consideration: Aledo, Arlington Heights, Ashton, Bushnell, Cambridge, Christopher, Downers Grove, Dwight, Elmhurst, Flossmoor, Great Lakes Naval Training Station, Greenville, Hoopeston, Kewanee, LaGrange, Lombard, Manteno, Neoga, Olney, Palatine, Pana, Pontiac, St. Charles and West Chicago.

STREAM POLLUTION

There are many cases of stream pollution in the State caused by untreated or inadequately treated sewage and industrial wastes. All cases of stream pollution are not seriously objectionable. Whether or not objectionable pollution prevails depends upon the use made of the water, the proximity of habitations, and the use made of the land bordering the water courses. In some cases, extreme pollution of water courses does not prove objectionable in any way, and in other cases even small pollution is very objectionable. Every problem of stream pollution must be solved in the light of local conditions.

Studies in connection with stream pollution have been carried on generally in cooperation with the Division of Waterways of the Department of Public Works and Buildings, which, under the law, has certain jurisdiction over pollution when such is caused by industrial wastes. At the present time, there is no law giving adequate jurisdiction to any State agency over stream pollution when caused by domestic sewage. The laws give riparian owners power to institute court proceedings and the division can always be called upon to testify at such hearings.

Because of the technical staff of the Division of Engineering and Sanitation and the laboratory equipment, this division is especially well qualified to carry on stream-pollution work and might properly, and

to the advantage and economy of the State, be given full authority over such problems. The sewage and waste discharged into streams have very little bearing upon the stream flow or stream channels or obstruction of water courses, but are important largely from the standpoint of health and nuisance. Moreover, the question of stream pollution is related to the installation of sewer systems, which directly or indirectly are problems for health authorities.

During the fiscal year, investigations of stream pollution were made at the following places: Blue Island, Charleston, Chicago Heights, Christopher, Dakota, Danville, Depue, DesPlaines, Downers Grove, Havana, Hoopeston, Pekin, Peoria, Rochelle, Round Lake and Stockton.

TREATMENT OF INDUSTRIAL WASTES AND SEWAGES

The division has continued to study methods of treatment of sewage and industrial wastes and has advised with municipal officials and industries as to the methods of such treatment in order to prevent or abate objectionable stream pollution. It is not considered the proper function of the department to prepare plans for treatment plants; but it is considered extremely desirable to give municipalities and industries the advantage of the experience the division has had in connection with examination of industrial wastes and sewage-treatment plants throughout the State and studies of current literature on the subject.

Pollution by industrial wastes also is frequently involved with pollution by domestic sewage. Often the industries are entirely willing to act to prevent objectionable stream pollution if they can be advised as to how to proceed. Treatment of industrial wastes is often a more difficult problem than treatment of domestic sewage, and the effect of industrial wastes on sewage when combined preceding treatment, is sometimes a rather complicated one. It would seem desirable to allow for an increase in the division in order to go into this work more thoroughly.

During the fiscal year visits have been made relative to treatment of industrial wastes to the following places: Ava, milk wastes; Dakota, creamery wastes; Elgin, test on sewage screen; Eureka, cannery wastes; Pekin, corn-products wastes; Rochelle, cannery, wool, and gas-plant wastes; Round Lake, creamery wastes; Stockton, cheese-factory wastes, and Washington, cannery wastes.

DRINKING WATER SUPPLIES FOR COMMON CARRIERS

The cooperative arrangement between the State Department of Public Health and the United States Public Health Service, perfected during the latter part of 1918, for the examination and certification of water supplies used on interstate common carriers has been continued. Under this arrangement, the department makes field examinations of all sources of water supplies used on interstate carriers and analyses of water from such sources. On the basis of these examinations and analyses,

recommendations are made to the United States Public Health Service as to whether or not the water supply should be certified or prohibited for use. It is expected that each source of supply will be examined once a year and analyses made twice a year or oftener. Although the cooperative work and the jurisdiction of the United States Public Health Service relates only to interstate carriers, the division has extended the work to cover also intrastate carriers.

This work has brought about improvement in many private sources of water supply from which water was obtained for common carriers and which had not been previously examined by this department. It has also been instrumental in forcibly bringing to the attention of public officials defects in public water supplies. The cooperation received from railroad and waterworks officials in this work has been extremely gratifying. In addition to the examination of the sources of supply and the making of analyses, attention has been given to the method of handling the water from the source to the car tanks. This is quite important for, although water may be safe at its source, it may readily be contaminated in the handling. This work has placed additional duties on the engineers of the division and increased the amount of laboratory work. There are 156 watering points now in use in 80 municipalities in the State. During the fiscal year 83 places, in which one or more watering points were located, were inspected and 693 samples were analyzed. The watering points examined during the year are located at the following places:

Alton.	Eldred.	North Chicago.
Anna.	Evanston.	Ottawa.
Aurora.	Flora.	Pana.
Beardstown.	Forrest.	Pekin.
Belleville.	Freeport.	Peoria.
Bement.	Galena.	Pinckneyville.
Bloomington.	Galesburg.	Pittsfield.
Brooklyn.	Gilman.	Pontiac.
Bureau.	Golconda.	Quincy.
Bush.	Grafton.	Rankin.
Cairo.	Granville.	Rockford.
Carbondale.	Harvard.	Rock Island.
Carlinville.	Havana.	Roodhouse.
Champaign.	Highland Park.	Salem.
Charleston.	Highwood.	Savanna.
Chicago.	Hume.	Seneca.
Chillicothe.	Jacksonville.	Shawneetown.
Cissna Park.	Joliet.	Springfield.
Crystal Lake.	Kankakee.	Spring Valley.
Cypress.	Kempton.	Staunton.
Danville.	Marion.	Sterling.
Decatur.	Mendota.	Streator.
DeKalb.	Minonk.	Taylorville.
Dupo.	Momence.	Toluca.
Dwight.	Mounds.	West Chicago.
East Peoria.	Mt. Carmel.	Wheaton.
East St. Louis.	Mt. Vernon.	Zearing.
Effingham.	Murphysboro.	

The following list shows the common carrier water supplies certified, provisionally certified, or condemned during the fiscal year:

COMMON CARRIER WATER SUPPLIES

CERTIFIED

Beardstown (2).	Freeport.	Pana (a2).
Belleville.	Galena.	Pekin (2).
Bement (a2).	Galesburg.	Peoria (2).
Bloomington.	Gilman (2).	Pontiac.
Bureau (2).	Golconda (c)**.	Quincy.
Bush (b).	Harvard (a).	Rockford.
Cairo.	Havana (2).	Rockford (a).
Champaign (2).	Hume (a).	Rock Island (2).
Champaign (a)*.	Joliet (2).	Roodhouse (a).
Chicago (2).	Joliet (a2).	Rossville (2).
Chillicothe.	Kankakee (2).	Shawneetown (a2).
Chillicothe (a).	Kempton.	Spring Valley (2).
Cissna Park.	Mattoon (2).	Streator (2).
Clinton (2).	Mendota.	Taylorville (a).
Cypress (a).	Momence (2)**.	Urbana (2).
DeKalb.	Mt. Vernon (2).	Villa Grove (2).
Dwight (2).	Murphysboro (2).	Wheaton.
Forrest (a).	Ottawa (2).	

PROVISIONAL CERTIFICATION

Anna.	Eldred (a).	Mt. Carmel.
Aurora.	Freeport.	Pittsfield (a).
Danville.	Golconda (c).	Rankin (a)**.
Decatur.	Granville (a).	Salem (d).
East St. Louis.	Highwood.	Seneca (a).
Effingham.	Mounds.	Toluca.

CONDEMNED

Bluffs (a).	Galesburg (a).	Pittsfield (a).
Centralia (a).	Grafton (a).	Rankin (a).
Cypress (a).	Jacksonville.	Salem (a)*.
Eldred (a).	Minonk.	Seneca (a).
Findley (a).	Momence.	Spring Valley (a).
Flora.	Mt. Carmel (a).	Toluca (a).
Forrest (a).	Pana.	

N. B.—Water from public supply unless otherwise noted. a=private well.
b=condensed steam. c=cistern. d=distilled water. *=two different supplies.
**=certified after necessary changes. 2=supply certified twice during fiscal year.

SANITARY SURVEYS

The division has continued to cooperate with the Division of Surveys and Rural Hygiene in making sanitary surveys of municipalities. In such surveys this division makes examinations of public water supplies, sewerage conditions, street-cleaning equipment, organization, methods and results, and collection and disposal of municipal wastes, including garbage, ashes, and rubbish. The question of drainage and its relation to eradication of mosquito-breeding places is also considered. As a result of this work, reports are prepared descriptive of existing conditions and a general scheme for improving any defects is outlined which is serviceable for the city in carrying out improvements and in engaging competent engineers in connection with needed improvements.

During the fiscal year cooperative surveys have been made at Alton, East St. Louis, and Moline.

MUNICIPAL PLUMBING ORDINANCE

In accordance with section 5 of an act providing for the licensing of plumbers and supervision and inspection of plumbing, in force June 29, 1917, the division has continued to advise with municipalities in the preparation of the plumbing ordinance required by law. The plumbing

ordinance prepared by the division in 1917, to serve as a guide for municipalities in the preparation of such an ordinance, has been furnished municipalities and plumbers. Because of the press of other work it has not been possible to revise this ordinance which, though it is generally satisfactory, could be materially improved. It has not been possible actively to follow up this work and ascertain what municipalities have adopted the ordinance or what variations have been made in ordinances adopted.

It should not be a function of the State Department of Health to supervise plumbing work in municipalities, but it would seem highly proper for the State to make provision for this division to keep informed and give careful consideration to modern plumbing practice, to serve in an advisory capacity to municipalities and individuals, and to be called in in case of disagreement between plumbers and municipal officials. Increase in funds would permit the division to see that municipalities were complying with the law by the adoption of a suitable plumbing ordinance, its enforcement, of course, coming under the jurisdiction of local officials.

NUISANCE COMPLAINTS

During the fiscal year many letters were received complaining of nuisances and unsanitary conditions. These complaints covered a wide variety of subjects and are listed in the following tabulation:

CLASSIFIED NUISANCE COMPLAINTS

Alleged cause of nuisance.	Number of complaints.
Impure water supplies.....	4
Polluted wells.....	9
Iron in water.....	1
Water shortage.....	4
School water supply.....	1
Impure factory water.....	2
Mine water supply.....	6
Sewers.....	10
Sewage disposal.....	14
Cesspools.....	6
Toilet facilities.....	2
Privies.....	19
Defective drainage.....	23
Stream pollution.....	7
Ditch pollution.....	7
Defective plumbing.....	3
Corn wastes.....	1
Catsup-factory wastes.....	1
Insanitary restaurants and hotels.....	14
Insanitary buildings and dwellings.....	6
Insanitary factory.....	1
Stables and barns.....	4
Manure.....	2
Hitch racks.....	4
Feed lots.....	4
Hog pens.....	60
Poultry houses.....	3
Chicken yards.....	3
Meat markets.....	1
Slaughter houses.....	6
Stock yards.....	4
Cattle near habitations.....	2
Cider press.....	1

Spoiled meat	1
Tankage plants	3
Carcasses	9
Weeds	6
Junk yard	3
Dumps	8
Garbage and filth	16
Dust, smoke and fumes	11
Insanitary construction camps	1
Insanitary schools	5
Inadequate schools	1
Ventilation	3
Fire in peat marsh	1
Cuspidors	1
General insanitary conditions	16
Total	320

The number of nuisance complaints has materially increased over those received during the preceding year. The policy of handling these complaints has continued the same. Since, under the laws, the Department of Health has no jurisdiction over local nuisances and insanitary conditions unless they are responsible for an epidemic and local officials refuse to act, it is customary to refer the complaints to local officials who have full authority to declare what constitutes nuisances and take necessary action to have them abated. Consequently, when letters of complaint are received, the complainant is informed of the authority vested by law in the local officials and a letter is sent to the local officials stating that a complaint has been made, describing the character of the complaint, and requesting that an investigation be made, any necessary action be taken, and the State Department of Health informed as to the results of the investigation and action.

In many cases the conditions that are the subject of complaint had not been brought to the attention of the local officials and were corrected at once. In some cases, the local officials have delayed or neglected to take action but have cooperated in improving conditions upon receipt of the letter from the State Department of Health. In some cases the local officials neglect or are incompetent to enforce necessary improvements. In other cases there are no real bases for complaints and the complaints are more or less the result of neighborhood quarrels.

It would be impracticable and it would require a large traveling expense fund and corps of inspectors for the State to investigate all such nuisance complaints, and moreover, the majority of the complaints can be adequately handled by local officials when they are brought to their attention. Some of the complaints, however, involve conditions that require investigation by or assistance of trained sanitary engineers to guide municipal officials in dealing with the situation, and in such cases the assistance of this division is given. Many such investigations are made at the request of local officials for advice, so that they may properly handle the situation. During the fiscal year the following places were visited relative to nuisance investigations:

PLACES VISITED RELATIVE TO NUISANCES AND GENERAL SANITARY CONDITIONS

Place.	Cause of nuisance.
Augusta	Defective drainage and privies.
Bartonville	Drainage from coal mine.
Belleville	Garbage hog farm.
Carlinville	Dirty streets.
Caseyville	Garbage hog farm.
East Peoria	Insanitary conditions at railroad yards.
East St. Louis	Garbage hog farm.
Glen Ellyn	Improper drainage.
Herrin	General insanitary conditions.
Hillsboro	Improper sewage disposal.
Hoopeston	Fumes and dust from chemical works.
Hume	Insanitary conditions.
Kankakee	Garbage dump.
Kankakee	Rendering plant.
Litchfield	Stagnant pond.
New Baden	Improper sewage disposal.
Ottawa	Fumes and smoke from factory.
Pontiac	Hogs.
Rockford	Sewage from sanitarium.
Rushville	Wastes from product company.
Stonington	Improper drainage.
Tamms	Sanitary conditions of hotel.
Tiskilwa	General insanitary conditions.
Tolono	General insanitary conditions.
Valler	General insanitary conditions.
Ziegler	General insanitary conditions.
Zion City	Improper sewage disposal.

WATER-BORNE EPIDEMICS

The division cooperates with the Division of Communicable Diseases when epidemics of disease occur which may be water-borne, such as typhoid fever and dysentery. The division also endeavors to bring about abandonment of interconnections between public water supplies of good quality and impure industrial supplies that might be the cause of water-borne diseases. During the year the division made or assisted in making investigations of epidemics at Bardolph, Bloomington, Joliet, Mt. Carmel, Peoria, and Ramsey.

The most important investigation of a water-borne epidemic, in which the division cooperated with the Division of Communicable Diseases, was the outbreak of typhoid fever which occurred among the employees at the shops of the Chicago & Alton Railroad at Bloomington. This epidemic comprised over 200 cases with 24 or more deaths. The inter-connection which was responsible for the epidemic was abandoned and a new water-supply distribution system installed, which system was examined by the division at the request of Chicago & Alton Railroad officials, railroad employees, and municipal officials.

TUBERCULOSIS SANATORIA

The division cooperates with the Division of Tuberculosis in the examination of sites and review of plans for county tuberculosis sanatoria, which sites and plans, according to the State law, must have the approval of the State Department of Public Health. The work of this division in this connection relates to water supplies, disposal of sewage, general drainage, and general sanitary conditions of surroundings. In some instances the availability of public water supplies and sewer systems

makes the problem a rather easy one, but in other instances separate water supplies must be developed and suitable means provided for disposal of the sewage.

During the fiscal year investigations were made and plans reviewed in connection with county tuberculosis sanatoria for Kane, Lee, McLean, and Tazewell Counties.

SANITARY INSPECTIONS OF SCHOOLS

The division has continued to make sanitary inspections of schools. Most of these inspections are made at the request of county superintendents of schools in accordance with the State law. As a result of the inspections reports are prepared, copies of which are sent to the county superintendent of schools, the State Superintendent of Public Instruction and, in some cases, to the local school authorities. These reports describe existing conditions and make specific recommendations for improvements when such are found desirable.

The investigations cover such items as (1) location and accessibility of school buildings; (2) character and suitability of school sites as regards area, general drainage, and surrounding conditions; (3) construction and adequacy of school buildings; (4) lighting; (5) heating; (6) ventilation; (7) toilet facilities; (8) water supply; (9) school furniture, and (10) interior decorations with reference to suitability of colors.

During the fiscal year, sanitary inspections of schools were made at the following places: Brookport, Clinton, Danville, Hume, Ladd, Manteno, Metropolis, Pontiac, Rockford, Shipman and Streator.

The sanitary inspection of school buildings is considered extremely important as insanitary conditions not only affect the health of the children, but improved sanitary conditions may be considered as an important item of training for the children. The children should be surrounded with the best of sanitary conditions in order that they may learn the advantages of such conditions, and this, in turn, will bring about improvement in general sanitary conditions at home. It would seem a desirable expenditure of money for the State to provide sufficient funds so that the State Department of Health could undertake on its own initiative, a study of all school buildings in the State instead of having to give consideration only to those that are brought to the attention of the department by county superintendents, or local school officials, or interested parents.

MUNICIPAL WASTE COLLECTION AND DISPOSAL

Studies of municipal waste collection and disposal and street cleaning are very important phases of sanitary engineering, but are less important from the standpoint of public health than the question of public water-supply and sewer systems. The division, therefore, has not actively undertaken such studies. The only places where such studies have so far

been made have been at Alton, East St. Louis, and Moline where the studies were part of the sanitary survey in cooperation with the Division of Surveys.

Waste collection and disposal and street cleaning in many municipalities are now given too little consideration and if the division were large enough to give proper consideration to this matter undoubtedly it would prove to be of great service to municipalities, not only in improving sanitary conditions but in bringing about more economical methods of doing such work.

MALARIA CONTROL BY MOSQUITO ERADICATION

The records of the Division of Vital Statistics show that malaria is quite a prevalent disease in certain parts of Illinois, especially in the southern portion of the State. Since it has been conclusively demonstrated that malaria is spread only by means of mosquitoes, the eradication of mosquitoes, by suitable drainage and the consequent elimination of breeding places, would reduce the number of cases of malaria and thereby effect a large economic saving to the State. Moreover, in some places, though malaria does not prevail, serious nuisances are caused by mosquitoes which tend to decrease usability and, therefore, the value of land. During the year, advice has been given by correspondence to several communities relative to mosquito eradication and inspections have been made at Litchfield. The staff of the division has not been adequate to undertake a survey of the State to define areas where mosquito eradication work would be desirable. Such a survey should be undertaken by the State.

SANITATION OF COMMON CARRIERS AND CONSTRUCTION CAMPS

The State Department of Health has now under consideration the adoption of a railway sanitary code, based upon the Railway Sanitary Code issued by the Committee on Health and Medical Relief of the United States Railroad Administration and approved with certain changes at the Conference of State and Provincial Health Authorities at Washington, D. C., in May, 1920. This code relates to sanitary conditions on common carriers, at railway stations, and at construction camps. It covers quite completely all matters that might affect the health of persons traveling on common carriers, using railway stations, or living in construction camps. Its adoption will place new duties upon this division and require an increase in staff to enforce it and advise with proper authorities in bringing about any necessary improvements.

INSPECTION OF SUMMER RESORTS

During the fiscal year, as in preceding years, owing to lack of personnel it has not been possible for the division to make inspections of all summer resorts at the beginning of the vacation season to insure that the water supply, sewerage, and general sanitary conditions are satisfac-

tory. This work would be extremely desirable because the summer resorts are visited by persons from all over the State and if persons become infected because of insanitary conditions at resorts, they may, on their return to their respective homes, serve as foci of infection for their communities. Because summer resorts are in use only a small portion of the year, there is a tendency for some owners and some persons visiting the resorts to neglect sanitary conditions. The buildings are often of a temporary character, and the water supply and sewerage conditions are frequently quite primitive. Since most of the summer resorts are outside of incorporated areas and thus not under the jurisdiction of any local health authorities, except the township officials, it should more than ever be the duty of the State to protect the health of the people by adequate inspection of such places. This work would require the attention of at least one man during the summer months.

SWIMMING POOLS AND BATHING BEACHES

The rapid increase in the number of swimming pools and bathing beaches is placing upon the division additional duties. The division is receiving requests from citizens for advice relative to the construction or operation of swimming pools and bathing beaches. It would seem proper for the State not to confine its attention to those pools and bathing beaches for the care of which advice is requested, but to undertake on its own part a study of all pools and bathing beaches similar to studies and investigations of public water supplies. To this end a circular letter has been sent out to all municipalities of 3,000 population and over and will be sent out to the remaining municipalities during the coming year. With the circular letters are sent blank forms which are to be filled in giving information about each pool.

It is hoped that the staff of the division may be increased so that the circular letters can be followed up by an inspection by a sanitary engineer of every pool and bathing beach in the State. Because of its laboratory facilities, the division is well qualified to carry on such work for field examinations of pools and bathing beaches as should be supplemented by analyses. Similar work is now being done in several other states and has been considered so important that a committee has been appointed by the American Public Health Association to study the question of swimming pools and bathing beaches in order that such may be standardized insofar as desirable and data collected which will be valuable to persons having supervision or control of pools and bathing beaches.

LABORATORY SERVICE

The laboratories of the Division of Engineering and Sanitation are maintained to make chemical and bacteriological examinations of water, sewage and industrial wastes. The work performed by the laboratory can be classified as follows: (1) Routine analyses of samples of water collected from existing water supplies with special emphasis on filtered

the cost of the filters and bottles. During this fiscal year 10,403 bottles were filled and distributed to the 84 water coolers throughout the Capitol Building. The decrease in the number of bottles of water used over the preceding year (12,961) is probably because the legislature was not in session.

TABLE XII—ANALYSIS MADE DURING THE FISCAL YEAR JULY, 1919-JUNE, 1920—CLASSIFIED AS TO SOURCE AND BY MONTHS.

Month.	Supplies used on common carriers.		Other public supplies.	Private wells.*			**Miscellaneous.	Totals.
	Public supplies.	Private wells.		Safe.	Safe with alterations.	Unsafe.		
July.....	24	5	19	3	5	28	16	100
August.....	10	5	30	2	18	59	2	126
September.....	39	12	27	5	14	63		166
October.....	82	21	23	1	20	46	5	198
November.....	49	17	42	5	15	10	17	155
December.....	16	14	6	2	6	6	8	58
January.....	19	4	18	1	7	7	10	66
February.....	41	12	29	1	6	8	5	102
March.....	69	18	41	2	10	14	5	157
April.....	51	12	15	3	13	15	2	111
May.....	59	18	48	10	11	17	4	167
June.....	73	23	23	4	18	29	11	177
Total.....	532	161	321	39	143	302	85	1,583

* Includes school wells, semi-public wells, and cisterns.

** Includes analyses of sewages, sewage effluents, ice, bottled waters, and chemicals.

The city of Springfield has under consideration the installation of an iron-removal plant that will eliminate the necessity of the operation of the filters by this division, but since the saving has amounted to about \$4,000 a year in addition to the cost of the filters it can be seen that their installation was an excellent investment.

EDUCATIONAL WORK

The educational work of the division consists of preparation of articles for publication in periodicals, bulletins, and newspapers, the making of public addresses on sanitary engineering and miscellaneous sanitary subjects, and preparation of an exhibit as a part of the exhibit of the department for the State Fair and county fairs.

Articles for publication must be such as to attract the interest of persons reading the respective publications and articles for newspapers must, of course, be somewhat brief and have news value. The majority of the lengthy articles have been prepared for publication in the monthly *Health News* issued by the department. Many of the articles for *Health News* are of value for permanent reference and additional copies of *Health News* are printed so as to be available for sending out in answer to requests for information on subjects covered by such articles.

Public addresses have been confined largely to informal talks before city councils, chambers of commerce, or other civic associations relative

to water supply and sewerage projects and general sanitary improvements.

During the fiscal year the following places were visited to give talks in addition to places where talks may have been given as a part of other work in connection with water-supply or sewerage projects: Champaign, Chicago, Decatur, Eureka, Litchfield, Moline, Mt. Morris, New Orleans, La., Pana, Princeton, Quincy, St. Louis, Mo., Virden.

A considerable amount of educational work is carried on by means of correspondence. Many letters are received requesting information relative to proper construction of wells, septic tanks, small sewerage installations, and general sanitary matters. In answering letters of complaint relative to nuisances, opportunity is also given to do educational work along sanitary lines.

MISCELLANEOUS INVESTIGATIONS AND SUMMARY.

In addition to the places listed in the preceding tabulations, miscellaneous investigations have been made at the following places: Bryant, imperfect drainage; Danville, garbage incinerator; Elgin sanitary conditions following tornado; Herrin, mine wash-water; Highland Park, bottled waters; Hinsdale, garbage incinerator; Joliet, housing conditions; Marengo, ice company well; Moline, factory fire systems; Naperville, ice supply; Pontiac, sewerage for county club; Princeton, proposed sanitary ordinance; Taylor Springs, water supply of American Zinc Company; Toledo, sanitary ordinance; Valier, mine wash-water.

The visits made and work done, other than laboratory work, during the fiscal year may be summarized in the following tabulation:

Visits made and reports prepared relative to:

Proposed new water supplies.....	11
Proposed improved water supplies.....	15
Existing water supplies.....	171
Proposed new sewer systems.....	19
Proposed improved sewer systems.....	18
Sewage-treatment plants.....	24
Stream pollution.....	16
Treatment of industrial wastes.....	9
Common carrier water supplies.....	83
Sanitary surveys.....	3
Nuisances.....	27
Epidemics.....	6
County tuberculosis sanatoria.....	4
Sanitary condition of schools.....	11
Miscellaneous subjects.....	15
Talks, addresses and association meetings.....	14
Letters written, (approximately).....	3,200

RECOMMENDATIONS FOR FUTURE DEVELOPMENT AND LEGISLATION

The comparatively small funds appropriated for the division and the consequent small staff does not make it possible for the division to carry on, as thoroughly as would be desirable, the activities mentioned near the beginning of this report. In order to carry on in a thorough and satisfactory manner the activities of the division, the staff should be increased.

At the present time certain work which might properly be done by this division of the State Department of Health rather than by any other State agency is now handled in other State departments. All State work in connection with public water supplies should be handled by the State Department of Health and all analytical work in connection with public water supplies should be done in the laboratories of the State Department of Health. At the present time, considerable confusion is caused to waterworks and public officials because of the duplication of work done by the Department of Health and by other State agencies. A correction of these conditions can be brought about by a change in the Administrative Code at the next session of the legislature.

The question of stream pollution is rapidly becoming a more serious problem than has heretofore existed in Illinois. At the present time, work in connection with stream pollution is divided among State agencies and no State agency, nor all agencies combined, has sufficient authority by law to handle the problem properly. Stream pollution is largely a sanitary engineering problem and more improvement at much less expense can undoubtedly be brought about by granting the State Department of Health certain authority. The question is closely interwoven with sewer systems and thus directly or indirectly becomes a public health matter. At the next session of the legislature, the laws relating to stream pollution should be clarified and amplified and control placed under the State Department of Health with sufficient authority and funds to carry out the laws.

Rules adopted by the State Board of Health in 1916, relative to the approval of plans for proposed water-supply and sewerage projects have been productive of good results, but better work could be done if these rules were embodied in laws and the department given an increase in funds properly to carry out the provisions of the law.

The division is accumulating a considerable amount of information relative to water supplies and sewerage that would be of interest and value to engineers, city and waterworks officials and others and, therefore, funds should be made available for preparation of this material for publication.

DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar*

With the admission of Illinois to the Federal Registration Area for Deaths, effective from January 1, 1918, and with its working force increased to twenty members through appropriations made by the Fifty-first General Assembly, the Division of Vital Statistics has directed its efforts, not only to increasing the degree of completeness of its birth and death records in point of number, but to perfecting a program which should enhance the value of each record from a legal, as well as from a statistical standpoint.

The organization of the division, found to be effective during the previous year in meeting the general requirements of the work, was continued on practically the same lines except for minor changes in the duties of individuals, made in recognition of the differences in ability and proficiency of various new and old employees and in view of the increased divisional personnel. It is believed that great improvement has been made, however, in the execution of work by the rearrangement of the office machinery in such manner as to permit the passing of certificates rapidly from desk to desk when found to be in acceptable form.

As a result of past experience, steps were taken to overcome the common failings on the part of local registrars and others concerned in the carrying out of the provisions of the law, according to the following general lines:

I. *Violations.*—All reports of violations of the State law received from local registrars or from other sources, are listed and made the subject of investigation by correspondence or by field agents. The results of these investigations are made a matter of record with memoranda as to whether or not the cases require prosecution or other drastic action. The records of these violations are kept at all times in convenient form for the use of the Director of the Department of Public Health. At the end of each month the lists of reported violations are prepared in quadruplicate to provide one copy for the director of the department, and working copies for the use of the registrar, the assistant registrar and the file clerk.

The average number of violations of the State law per month, reported during the fiscal year ending June 30, 1920, was 53, and a considerable portion of time of the assistant registrar and of the several field agents has been devoted to the investigation of these violations.

Incidentally, whenever field agents are delegated to investigations of violations of the law, they are advised to employ every opportunity to give added instruction to local registrars, and, in the investigation of complaints, they are instructed to weigh all cases with respect to the natural qualifications of the registrar and the question of wilful violations.

In the enforcement of the law, certain defects in the law itself have become apparent, and it is believed that entirely satisfactory registration cannot be obtained without several distinct changes in the statutes. Recognizing the weaknesses of the present law, particularly as it applies to the selection and status of local registrars, the State Department of Health has endeavored to attain its ends by education and persuasion rather than by prosecution and the imposing of penalties upon men whose natural qualifications have not fitted or prepared them for their duties.

II. *Delinquent Registrars.*—During the latter part of 1919, a daily record of receipts from local registrars was established whereby it was possible constantly to have available information as to all registrars failing to send in their returns promptly on the tenth day of each month, and to these delinquent registrars special notices have been sent as a matter of routine.

Lists of delinquent registrars are prepared for the information of the director of the department at the end of each month, and additional copies of these lists are made for the information of the registrar, the assistant registrar, the file clerk and for the several field agents. During the six months ending June 30, 1920, delinquencies on the part of local registrars had been noted to the number of 2,039, or an average of 340 delinquencies each month, making 22.7 per cent of the total number of local registrars generally delinquent.

The complete compilation of all delinquencies and the placing of delinquent lists in the hands of field agents and of all other persons concerned in complete registration, has kept constantly before them the shortcomings of the individual registrars for guidance in making personal inspections or in corresponding with the affected communities, while delinquent notices sent to registrars at the end of each month, together with personal investigations of field agents, have brought to light the more common misconceptions and misinterpretations of the law among registrars.

To overcome these misconceptions, there has been prepared a series of form letters designed to answer the more common questions of interpretation. These have been employed at a great saving in stenographic service. It has been found necessary to send these letters of additional instructions to about sixty registrars each month, indicating that approximately 20 per cent of the registrars have failed in the past to appreciate or intelligently understand the provisions of the law.

III. *Reports of Local Registrars.*—The habit on the part of many local registrars of transmitting to the division birth and death certificates daily or as frequently as they are received by them, has resulted in an unnecessary waste of postage and expenditure for clerical service, both on the part of the registrar and in the division office. Unnecessary wastage of effort has also resulted from misconception on the part of local registrars whereby copies of certificates intended for county clerks, have been transmitted to the division. Confusion has also been created by failure on the part of registrars to observe the geographic limits of their districts. In many instances certificates of deaths, births or stillbirths, belonging in another nearby jurisdiction, have been received without question by the local registrars, transmitted to the division and claim made for fees.

To overcome these errors which, trivial as they may seem, interfere materially with complete and satisfactory registration, the division has devoted itself within the past year to the preparation of form letters directing registrars to make but one transmittal each month and that on the tenth day of the month, as required by the department. Attention has been called to the fact that the Division of Vital Statistics should not receive copies of certificates intended for the county clerk, and a memorandum to county clerks has been prepared asking them to provide for the transfer of credit for registrar's fees in case certificates were received and transmitted by registrars outside their proper jurisdiction. The efforts of the division along these lines have resulted very satisfactorily.

IV. *Completion of Defective Birth Certificates.*—Although the character of birth certificates has been improved during the past year, it is estimated that fully 15 per cent of the certificates received at this time from the smaller cities and rural districts, fail to contain essential data. This is attributed to ignorance of the law or indifference on the part of parents, physicians and local registrars. In many instances the name of the child is lacking, rendering the certificate worthless so far as its future value to the child is concerned.

In every instance communications are forwarded to attending physicians and parents for the purpose of receiving more correct data, and a check record of this work, maintained during a period of several months, shows that at least thirty communications daily have been necessary.

This correspondence with physicians and parents for the purpose of completing birth certificates is in reality the assumption by the State Department of Health of a duty which should be performed by the local registrar, entailing considerable expense to the department and causing the loss of the services of at least one clerk in a staff which is already inadequate. It is believed that this condition can be overcome only by a

provision for the employment of local registrars who shall be more directly under the control of the State Department of Health.

V. *Defective Death Certificates.*—From a statistical standpoint it is essential that all certificates of death shall be correct before they can be tabulated. During the past year it has been found that approximately 10 per cent of the death certificates received by the division are defective in one or more essential detail. During the period of seven months, in which 30,313 deaths occurring in the State of Illinois outside of Chicago were handled, it was necessary to send out 2,925 letters to undertakers, local registrars and physicians for the purpose of making death records complete. In many instances communications forwarded to both undertakers and physicians have failed to produce a satisfactory response and it has been necessary to send further communications to lay informants or members of the family of the deceased.

A study of the sources of defective death records elicited the fact that many of them come from State and county institutions and from public and private hospitals. Consequently field agents for the division have been instructed to visit all public and private institutions for the treatment of the sick and to instruct the managing heads of these institutions to prepare, on the admission of the patient, a complete record containing all of the necessary statistical information. In obtaining more complete records from the State institutions, the division has received the thoroughgoing cooperation of the State Department of Public Welfare, the results being such that it will be possible to employ the methods now prevailing in State institutions as models for county institutions, and for public and private hospitals and sanatoria.

VI. *Medical Classification.*—The method employed by the division to secure more accurate information for medical and occupational classification of death records, was described at length in the Second Annual Report. During the past year the same method has been followed, with certain additional efforts for obtaining complete data in deaths ascribed to "pneumonia" or "broncho pneumonia," and otherwise unqualified, and for deaths attributed to "anemia," "asphyxiation," "burns," "convulsions" and "paresis."

The success attained in improving death records, so far as the cause of death is concerned, is indicated by the fact that during the year 1918, 3,000 transcripts of death certificates were returned by the United States Bureau of the Census for further information, while, for the year 1919, only 869 transcripts were returned. Of these, 600 were transcripts originating in the city of Chicago, and 269 from other sections of the State. For the six months ending June 30, 1920, no transcripts originating in the State, outside of Chicago, have been returned from Washington, and only 312 Chicago transcripts.

In addition to its routine work in classifying the certificates for the current year, the division has devoted all possible time to the classifica-

tion of death certificates received for the year 1916, the certificates for 1917 having already been completed. The division has also been engaged in the occupational classification for the years 1916, 1917 and 1918, in order that this work, which will probably be completed by July 1, 1921, may cover the entire period since the present law became effective.

VII. *Reports of Communicable Diseases.*—During the past year, reports of all deaths ascribed to reportable communicable disease, have been made daily to the Division of Communicable Diseases, while the reports of deaths attributed to venereal disease have been transmitted daily to the Division of Social Hygiene.

VIII. *Occupational Classification.*—With the attainment of a high degree of success in meeting the requirements of medical classification, the efforts of the classification section have been directed toward preparation of a proper standard of death certificates with regard to the feature of occupation, a most important feature from a statistical standpoint, and one to which many of the states have so far given scant attention, and which in Illinois has been almost entirely disregarded.

The progress made in securing complete occupational data is indicated by the fact that, while in January, 1920, it was necessary to refer back for correction one out of every sixteen certificates, conditions had improved during the succeeding three months so that correspondence was necessary in only one of every thirty-five certificates. With certificates received from the city of Chicago it was necessary in January to question one out of every thirteen certificates, while at the end of the fiscal year question was necessary in regard to Chicago certificates in only one out of eighty-seven.

IX. *Registration of Old Birth Reports.*—On account of the new importance attached to registration of births incidental to the World War, and incidental to the increased child labor legislation, there has developed a very great demand for certification of births occurring prior to the time the present act became effective. To meet this demand, blanks have been sent to all applicants with simple instructions as to meeting the requirements of the law and with further instructions to refer the application for certification to the county clerk to make certain that the original certificate of birth is on file with the county official.

X. *Coroner's Certificates of Death.*—On account of the custom prevailing on the part of physicians in the past of preparing certificates of death and presenting them directly to the county clerk, and the former custom on the part of county clerks of receiving these certificates from physicians without scrutinizing causes of death, and of the old custom on the part of physicians of preparing death certificates and forwarding them directly to the State Department of Health, it has been found that many certificates have been accepted from physicians which, on account of cause of death, should have been brought to the attention of coroners. This situation has lead to considerable confusion of more or less legal

moment and the necessary action on the part of the division in referring these activities back with the recommendation for investigation by the coroner, has provoked some resentment on the part of physicians who have erroneously signed the certificates, and considerable concern and distress on the part of members of the families of the deceased.

To obviate these errors, the division has prepared and widely distributed a complete list of "coroner's cases" and this, with the general distribution of a letter of instruction to the coroner, has resulted in very material improvement. In fact, during the past fiscal year, it is apparent that the coroners of the State have understood their duties under the present registration law much better than ever before, and there has been no instance of obstinate violation on the part of these county officials. There promises to be no difficulty in the future in securing thoroughgoing compliance of the law on the part of coroners, but it promises to be a much more difficult matter to fully instruct the 12,000 physicians of the State so that they will not encroach upon the province of the coroner. This difficulty is made the greater through the fact that there has been no recent authentic list of legally qualified physicians of Illinois available for reference. It appears highly desirable, regardless of the expense entailed, that the State Department of Health should be supplied with correct and addressographed lists of all coroners, local registrars and licensed physicians, so that a campaign of education in regard to requirements may be carried on during the coming year.

UNSATISFACTORY LOCAL REGISTRARS

The experiences of the past few years, supplemented with a careful study of a great mass of registration correspondence, leads to the conclusion that the township clerks of Illinois are frequently unqualified, educationally or otherwise, for the office of registrar of vital statistics. In addition to this, it has been ascertained that in a great many sections of the State, and particularly those sections having a large agricultural population, there is a distinct objection to the election of a resident of a city or village as township clerk, this office usually being given to residents of rural communities. Under these conditions, it becomes exceedingly difficult for physicians to present certificates of birth and for undertakers to present certificates of death with applications for burial permits. For this reason, there is a tendency on the part of physicians and undertakers to present their certificates to the most convenient registrar, regardless of geographical limitations of his jurisdiction, or to fail to present their certificates at all. As pointed out in previous reports of this division, it appears to be absolutely necessary that township clerks or other persons serving as local registrars shall be located in cities, towns or villages.

Another reason for the unsatisfactory character of local registrars is that the township clerks are elected for a period of only two years and

that with some 1,400 such officials in the State there are about 700 new clerks elected each year. These men come into office without the slightest knowledge of the requirements of registration, leading to constant errors and confusion. During the first half of 1920, there were 447 entirely inexperienced township clerks who had to be instructed in the more or less technical details of registration work.

This condition can only be overcome by the amendment of the vital statistics law, eliminating township clerks as registrars and providing for convenient places of registration in cities and villages, preferably of local registrars, regardless of their township office and more directly responsible to the State Department of Health.

A law enacted in the state of California provides that the local health official may act as registrar and that the state health department shall appoint a registrar for each rural primary district, whose term of office shall be four years and who will be removed forthwith for failure or neglect to perform his duties as prescribed by the statutes.

DIRECTORY OF LOCAL REGISTRARS

The edition of the directory and book of practical instruction, of local registrars, issued by the State Department of Health in 1918, designed for the use of physicians, local registrars and undertakers, is practically exhausted and should be reprinted. This book, with its instruction to local registrars, was unquestionably of material aid, but should be entirely rewritten to show the new registration district boundaries resulting from the combinations recently made, which have reduced the number of districts from 2,500 to approximately 1,500. The pages of instruction should also be revised to contain information found to be necessary in the experiences of the past two years. This directory and book of instructions should be placed in the hands of each of the 7,000 physicians outside of Chicago, and in the hands of all local registrars and all undertakers residing outside the city of Chicago.

Combinations of registration districts referred to above, based upon investigations made by field agents, have continued during the past fiscal year and will be continued in the future. In November, 1919, there were 1,557 registration districts as compared with 1,498 on June 30, 1920. These districts include 2,683 primary districts.

FIELD INVESTIGATIONS

One field agent allowed to the Division of Vital Statistics at the beginning of the fiscal year and an inspector designated by the Division of Social Hygiene for part-time employment, have been able to cover greater territories than in times past, and have carried out the following essential work: (a) surveys of State, county and private hospitals and institutions, for the purpose of obtaining more complete mortuary and birth data; (b) investigations relative to the combinations of the registration districts; (c) settlement of cases of dispute in cases of payment

of fees; (d) investigations of violations of the State law; (e) investigations of registrars persistently delinquent; (f) conferences with undertakers, physicians and local registrars, in case letters of inquiry produce no results.

From July 1, 1919, to the end of the fiscal year, these two representatives of the department have covered the registration districts in the following counties: Dr. F. C. Blandin—Adams, Boone, Carroll, Cass, Champaign, Cook, DeWitt, Ford, Fulton, Grundy, Hancock, Henry, Iroquois, Kankakee, Kendall, LaSalle, Lee, Livingston, Logan, Macon, Marshall, Mason, McDonough, McLean, Menard, Ogle, Peoria, Piatt, Putnam, Rock Island, Tazewell, Vermilion, Warren, Whiteside, Will, Winnebago and Woodford; Dr. H. T. Burnap—Bond, Calhoun, Christian, Clark, Clinton, Coles, Cook, Crawford, Cumberland, Douglas, Edgar, Effingham, Fayette, Greene, Jasper, Jefferson, Jersey, Macoupin, Madison, Marion, Moultrie, Pope, Sangamon, Shelby, St. Clair, Washington and Williamson.

As the result of these personal visits to interested communities and the forms of report exacted by field agents, the division now has on file very complete data relative to each county, giving valuable information as to the local condition prevailing. This compilation of reports conveys to the office force of the division an understanding of local difficulties and of the qualifications of registrars of the utmost value, preserving the information gleaned by individual field agents for the permanent use of the department.

INDEXING AND TABULATION

All death certificates from sections outside the city of Chicago for the year 1919 were indexed before the punching of the statistical cards, and the 1920 death certificates from the same area are now being similarly indexed. The mortality data for the fiscal year ending June 30, 1920, are shown in Table XIII.

On account of the great number of incomplete certificates received and the necessity for the employment of several typists in securing lacking data, birth and stillbirth certificates have not been indexed nor will this be practicable until additional filing space is provided, inasmuch as the present card files of the division are now taxed to capacity. Reports of births by counties are shown in Table XIV.

Late in June, 1919, the equipment for entire mechanical tabulation with punching machines, sorting machines and tabulators, was completed. With its increased number of employees, the division has been able during the past year to carry out complete mechanical tabulation according to the plan originally outlined. The deaths for the State, outside of Chicago, for the year 1919, have now been completely tabulated by county, month, color, and for all diseases in accordance with the Detailed International List of Causes of Death, and tabulation has

also been made of these details for all important cities and towns in the State. As a result, the division now has available for immediate reference, for the year 1919, the following information relative to each death certificate: registration district number, county, city and class of city, sex, color or race, conjugal condition, age at death, occupation, birthplace of deceased and of father and mother, date of death, cause of death, duration of illness and whether or not deceased was a resident or non-resident of the State, county or place where death occurred.

STATISTICAL REPORTS

During the fiscal year the division has been called upon repeatedly for various statistical reports, among which the following were of special interest:

Mortality record of Illinois, showing estimated population as of January 1, 1919, total deaths (exclusive of stillbirths) from all causes, and death rates per 1,000 of population, together with deaths from diseases of major sanitary importance by counties, and by important cities and towns.

United States Public Health Service, Annual Mortality Summary for Illinois, for year 1919.

Table of Comparison, Illinois Annual Mortality Summaries, for the years 1917, 1918 and 1919.

Base sheets of comparative statistics of the births and deaths occurring in Illinois during the years of 1917, 1918 and 1919, including rates for the State, city of Chicago, and Illinois, exclusive of Chicago, with deaths from diseases of major sanitary importance by counties and for the city of Chicago.

Reports to the Department of Education and Registration of deaths of physicians in the State, as shown by death certificates received, or from correspondence, also reports of persons acting as midwives, where certificates have shown their status to be questionable.

Deaths of children under five years of age, by counties, and by age groups, January to June inclusive, 1919, with total deaths from all causes and estimated population as of July 1, 1919.

Deaths from certain accidents, first six months of 1919.

Statistics of births and deaths in Illinois, for the years 1917, 1918 and 1919.

Deaths resulting from the puerperal state, January to June inclusive, 1919.

Total deaths, all causes, and death rates by months for Illinois, year of 1919.

Deaths of infants under five years of age, in Coles County, and Mattoon city, years of 1917, 1918, 1919 and first five months of 1920.

Deaths of infants under one year of age, and deaths of infants under two years of age, by months and by causes, in the city of Springfield and in Sangamon County, years of 1917 and 1919.

Deaths by months and by causes, and deaths of infants under five years of age by months, by causes and by age groups, Will County, for the year 1918.

Deaths of infants under one year of age, and deaths of infants under two years of age, by months and by causes, with total deaths (exclusive of stillbirths) from all causes in the city of East St. Louis, fiscal year 1917-1918.

Deaths from typhoid fever and death rates per 100,000 of population for Coles County, and Mattoon city, years of 1917, 1918, 1919 and first five months of 1920.

TABLE XIII—MORTALITY RECORD OF ILLINOIS, DEATHS, (EXCLUSIVE OF STILL-IMPORTANCE, BY COUNTIES, AND PRINCIPAL CITIES

NOTE.—Numbers in parenthesis at heads of columns refer to titles in the Manual of the

Counties with im- portant cities and towns.	Population mid-year 1919-1920.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				(1)	(4)	(5)	(6)	(7)	(8)
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
The State	66,485,098	81,159	12.5	386	107	8	429	324	444
Adams County	662,188	912	14.7	5	2			6	7
Quincy	355,973	518	14.4	3	2			3	3
Alexander County	226,059	453	17.4	8	11		8		
Cairo	15,203	334	22.0	4	3		3		
Bond County	18,049	152	8.4	2			1		
Boone County	15,322	179	11.7	1					
Brown County	110,397	110	10.6					1	2
Bureau County	47,516	417	8.8				1		2
Calhoun County	18,610	84	9.8	2				1	11
Carroll County	118,035	183	10.1						1
Cass County	117,896	182	11.2	4			3		
Champaign County	55,965	624	11.1	3	1		1	5	7
Urbana	10,230	159	15.5						2
Champaign	15,873	217	13.7	2				2	1
Christian County	235,309	332	10.8	2	1		3		4
Clark County	123,517	253	10.8	4			2	1	
Clay County	118,661	212	11.4						6
Clinton County	222,947	210	9.2	1			2	1	3
Coles County	35,108	454	12.9	10			4		1
Mattoon	15,449	181	11.6	8			2		
Cook County	53,053,017	39,465	12.9	38	9	1	129	194	209
Chicago	2,701,212	35,445	13.1	32	7	1	111	180	191
Chicago Heights	19,653	229	11.7	1			7	2	1
Cicero	44,995	347	7.7						1
Evanston	37,215	477	12.8					6	2
Maywood	12,072	106	8.8						
Oak Park	39,830	609	12.8		1			4	2
Blue Island	10,528	194	18.4	1					
Elgin	(3)								
Crawford County	522,771	252	11.1	1	1		3		1
Cumberland County	114,281	134	9.4				1		2
DeKalb County	35,125	357	10.2	1	1		1		
DeKalb	10,258	100	9.7						
DeWitt County	19,352	203	10.5				1		1
Douglas County	20,074	216	10.8	3				3	1
DuPage County	42,120	350	8.3	1			1	2	
Edgar County	127,336	295	10.8	5		1			1
Edwards County	110,049	125	12.4	1	3		4		1
Effingham County	20,055	280	13.0	2	1		2	1	3
Fayette County	28,083	322	11.5	9			8	1	1
Ford County	17,096	204	11.9	1				2	7
Franklin County	32,100	631	19.7	16	4	1	41		8
Fulton County	52,841	635	12.0	3			1		5
Canton	10,928	182	16.7				1		2
Gallatin County	114,628	137	9.4	4	4				
Greene County	522,883	273	11.9	3	1	1		1	1
Grundy County	118,580	189	10.2	1			1		
Hamilton County	118,227	152	8.3						3
Hancock County	228,523	291	10.2	2					7
Hardin County	37,015	61	8.7	3	4		2		
Henderson County	9,724	78	8.0						1
Henry County	43,396	609	14.0	11			2	1	2
Kewanee	16,080	266	16.6	2					
Iroquois County	34,841	293	8.4	2				2	2
Jackson County	37,091	493	13.3	12	6		7		2
Jasper County	118,157	152	8.4		1				
Jefferson County	30,073	373	12.5	3	1		2	1	
Mt. Vernon	39,815	157	16.0		1				
Jersey County	52,682	111	8.8	3					
JoDavies County	21,917	246	11.2				1		2
Johnson County	52,022	106	8.8	5	3		1		1

BIRTHS FROM ALL CAUSES, AND FROM DISEASES OF MAJOR SANITARY AND TOWNS, JULY 1, 1919 TO JUNE 30, 1920 INCLUSIVE.

"International List of Causes of Deaths," Second Revision—Paris, 1909. (Detailed List.)

Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Polomyelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
1,061	5,661	3	5,956	785	407	95	101	8,118	178	463	58
8	59		55	6	4	1	2	69	3	4	1
4	27		31	6	2		1	47		1	1
9	24		69	6				37		9	6
2	19		65	6				22		9	4
	25		13	1	3	1		6			
	20		8	1	2		1	18			
	22		11					12			
2	25		28	3	3		4	34	2	1	
3	5		7		2			6			
	5		6	2	2			13	1	1	
1	22		8	1				11		2	1
4	51		28	8		2	1	38	1	2	1
2	7		11	1				11	1		
1	15		11	5				15		1	2
3	36		19	5	2		1	38			
	24		22	1	2		1	27	2	2	
4	12		20	2				13			
2	18		12	2	4	2	1	19		3	
1	6		19	2	2	1		35	2	1	
668	2,307	1	10	2			21	18	3	2	
605	2,080	1	3,223	423	199	50	13	4,457	35	244	18
9	16		2,527	372	186	42	1	3,998	20	224	18
22	24		7	2				28			
3	26		25	4	1		2	39	3	1	
1	18		21	3	4		1	44	4	2	
2	17		6					3			
	22		17	4	2			65	2		
	13		7	3			1	16	3	2	
2	22		14	2				21			
3	13		5			3		15		2	1
1	25		19	7	1		2	22	2		
1	18		5					7		2	
1	14		12	1		1		18	2	1	
2	22		10	1				22	2		1
2	11		17	6	2	1	1	29		1	
3	14		21	4	3	1		11	1		
4	17		15	1			1	4			
3	30		18	5	2		2	24		2	
2	24		21	1	1		3	30	4		
10	81		11	1				15		1	
2	74		48	5	1	4	1	60	1	2	1
	28		23	2	4		2	48	1	3	
9	9		6	1				9			
1	23		11	5	1			13	1		
2	18		20		1		1	19		1	
3	22		7	1				17	1		
2	27		18	6				19			
3	1		15	3	2			19			
1	11		8	1				4			1
1	74		3		1			4	1		
	42		22	2	5			70	4	2	
4	29		9					40	1		
12	67		13	2	1			17	2		
2	24		33	3	3		2	30	2	5	
6	42		12		1			10	1		
	15		35	5	1		1	43		2	
	17		17	3	1		1	16			
	11		6					7			
	17		11		2			23		1	
2	10		6		2			7	1		

TABLE XIII

Counties with important cities and towns.	Population mid-year 1919-1920.	(1-189)	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
					(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
Kane County	599,499	1,363	13.7	3				1	1	1
Aurora	536,265	602	16.6	1				1		
Elgin	527,431	463	16.9	2						
Kankakee County	544,940	738	16.4	5				3	1	1
Kankakee	516,721	204	12.2	1				1		
Kendall County	510,777	108	10.0						1	
Knox County	548,663	623	12.8	5	1			1		4
Galesburg	523,334	377	15.8	4				1		1
Lake County	574,285	895	12.0	19				8	4	1
Waukegan	522,597	249	11.0	10				6		1
LaSalle County	592,925	1,138	12.2	4	1			3	5	2
LaSalle	513,050	189	14.5	2				2		
Ottawa	510,316	154	14.2							
Streator	514,779	251	17.0	1					4	
Lawrence County	528,694	200	7.0	9				4		
Lee County	527,750	331	11.9		1			2	2	3
Livingston County	540,465	415	10.3	1				1	1	4
Logan County	531,718	401	12.6	2				7	3	1
Lincoln	511,882	243	20.5	1				6	2	1
Macon County	565,175	811	12.4	3	1			9	3	6
Decatur	543,318	656	14.5	3	1			7	2	4
Macoupin County	557,274	477	8.3		1				1	9
Madison County	5106,895	1,269	11.9	9	5			9	5	4
Alton	524,714	367	14.8	2	2			5	1	2
Granite City	514,757	160	10.8	1				2	1	
Marion County	537,497	447	11.9	4	1			4		3
Centralia	512,491	166	15.3	2				1		
Marshall County	514,760	157	10.6	1						1
Mason County	516,634	178	10.7	4	1					
Massac County	515,267	206	13.5	6	2		1	4	2	2
McDonough County	5126,387	374	13.9	1						3
McHenry County	533,164	386	11.6					3	4	2
McLean County	568,165	912	13.4	13						3
Bloomington	528,658	465	16.2	7						3
Menard County	511,694	150	12.8							1
Mercer County	518,800	185	9.8							2
Monroe County	512,839	113	8.8	1				4		
Montgomery County	541,403	538	13.0	1				3	1	1
Morgan County	533,567	766	22.8	4						1
Jacksonville	516,713	580	36.9	3						
Moultrie County	514,630	157	10.7					2		
Ogle County	5127,864	280	10.0					1	2	1
Peoria County	5111,704	1,772	15.9	5	3			6	14	4
Peoria	576,121	1,146	15.1	4	2			6	10	4
Perry County	524,303	302	12.4	2	3			8	1	1
Piatt County	515,714	155	9.9	1				2	2	1
Pike County	526,866	302	11.2	2					8	1
Pope County	511,215	50	4.5							
Pulaski County	514,629	219	15.0		5			2		1
Putnam County	510,325	65	6.3							
Randolph County	529,109	322	11.1	6	1			6		1
Richland County	515,970	202	12.6		1				1	1
Rock Island County	585,301	1,132	13.3	7			1	5	2	11
Moline	530,709	598	13.0	4			1	1		3
Rock Island	535,177	400	11.4	2				3	2	7
Saline County	538,353	439	11.4	10	2			6		2
Sanamon County	5110,121	1,381	12.5	7	1			8	4	2
Springfield	559,183	979	16.6	6				1	2	
Schuyler County	513,285	151	11.4	2						1
Scott County	59,489	85	9.0							
Shelby County	529,601	297	10.0	1				1	3	2
Stark County	510,098	84	8.3							
St. Clair County	5151,490	1,529	10.1	7	4			23	4	5
Belleville	524,741	346	14.0	2				6		
East St. Louis	566,740	814	12.2	5	2			17	3	3

—Continued.

Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Poliomyelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
8	63		87	11	11	3	1	135	7	6	2
3	39		36	4	6	2	1	73	4		
1	9		31	3	4			42	2	6	2
7	18		86	4	4		1	59	5		1
2	10		11	3	1			15	1		1
	12		4	1		1		8			
3	38		38	5	3	1	1	76	7	3	1
2	21		13	6	3		1	54	4	1	1
5	118		54	14	1	1	2	89	3	7	
	17		14	1				26	1	1	
5	116		74	7	3			82	2	4	
	18		12	2				19		3	
	11		10	1				12			
4	44		7	1	2			12	1	1	
2	18		13	5	2	1		13			
2	28		11	2	4	1	1	21	1		
4	36		9	1	1		2	38	1	2	
6	78		65	6	1		1	31		2	
5	45		55	6	1		1	25		2	
8	71		54	3	3	1		47	2	6	2
6	54		44	3	2	1		38	2	6	2
7	34		23	6	1		3	45	2	1	
27	79		97	14	5	2	1	127	2	2	1
2	22		24	5	2			40			
3	11		11	2	1			10	1	5	1
8	28		38	5	3	1	2	45	1	3	
1	7		16	2		1	1	8	1		
1	13		5		1	1	1	12	1		
1	17		9	2	1		1	10		2	
4	4		18	1	2			19		2	
	24		11	1				24	5	6	
4	25		16	7	3			41	2		
6	79	1	39	12	2	1	1	62	2	5	3
2	36		16	2	1	1	1	42		2	1
3	13		11	1				12	1	1	
	23		11	1	1		2	14	1		
	4		8					11			
4	60		27	3	2		1	36		3	1
2	49		46	6	1			91	1	3	1
1	22		37	6				68		3	1
1	15		12	1	1			13	1		
	24		17	1				30		1	
20	103		159	10	5	2	3	150	5	20	3
16	68		53	5	3	2	2	104	1	20	3
2	32		17	3	3			12			
	12		13	1	1			13			
3	25		31	2		2		20	2	1	
1	3		4					1		1	
3	20		33	1			1	18	1	3	1
3	6		3				1	7		1	
	23		27	4	2			37	4	1	
2	18		16	2				12	1		
6	49		67	11	6	3	3	115	3	9	1
6	17		15	3	2	3	2	43	2	4	
1	20		33	3	3			29		1	
12	65		34	5	1		2	27	1	4	
18	76		105	9	11	1	3	138	5	16	1
9	47		37	6	8	1	3	109	3	13	1
5	12		11	1			1	6	1		
	5		3					7			
	34		16	1	5			31		1	
	11		3					3			
19	69		94	11	10	2	3	128	1	11	2
11	21		23	4	3			21		1	
8	48		46	7	7	1	1	84	1	9	2

TABLE XIII

Counties with important cities and towns.	Population mid-year 1919-1920.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
Stephenson County.....	⁶ 39,773	555	14.0	1	—	—	—	6	3
Freeport.....	⁵ 19,689	389	19.8	1	—	—	—	6	—
Tazewell County.....	⁶ 34,814	433	12.4	2	2	—	—	1	8
Pekin.....	⁶ 12,913	139	10.8	—	1	—	—	—	6
Union County.....	⁶ 21,856	396	18.1	7	4	—	1	—	—
Vermilion County.....	⁶ 86,162	1,280	14.9	5	1	—	21	4	8
Danville.....	⁵ 53,750	563	16.7	2	1	—	6	1	4
Wabash County.....	⁶ 17,201	180	10.5	4	3	—	5	2	—
Warren County.....	⁶ 23,456	292	12.4	1	—	1	—	—	—
Monmouth.....	⁵ 8,116	164	20.2	1	—	1	—	—	—
Washington County.....	⁶ 18,759	150	8.0	3	1	1	1	—	1
Wayne County.....	⁶ 25,697	205	8.0	3	1	—	—	—	1
White County.....	⁶ 23,052	261	11.3	5	1	—	—	—	1
Whiteside County.....	⁶ 36,174	438	12.1	—	—	—	6	1	1
Will County.....	⁶ 92,875	1,107	12.0	13	—	—	4	2	1
Joliet.....	⁵ 38,372	481	12.5	5	—	—	5	2	1
Williamson County.....	⁶ 62,105	765	12.3	14	6	—	18	2	7
Winnebago.....	⁶ 90,929	989	10.9	1	—	—	2	3	4
Rockford.....	⁶ 65,651	776	11.8	—	—	—	2	3	4
Woodford County.....	⁶ 20,506	180	8.8	—	—	—	—	—	—
County total.....	(4)	81,159	—	386	107	8	429	324	444

¹ Population April 15, 1910: Decrease between 1900 and 1910; no estimate as of January 1, 1920 made. No announcement of Bureau of Census enumerated population, January 1, 1920 received.

² Based on population as estimated by the Bureau of the Census as of July 1, 1917; decrease between estimate of 1916 and 1917; no estimate as of January 1, 1920 made. No announcement of Bureau of Census enumerated population, January 1, 1920 received.

³ Major portion of Elgin City lies within Kane County. See Elgin City, Kane County, for Death Rate covering entire City.

⁴ See Bureau of Census announced enumerated population, January 1, 1920 for State (subject to correction), page 1.

⁵ Bureau of Census announced enumerated population, January 1, 1920—subject to revision.

⁶ Estimated population as of January 1, 1920; no announcement of Bureau of Census enumerated population January 1, 1920 received.

—Concluded.

Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Polyomyelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
4	54		18	9	1			36	4	6	
4	43		11	7				22	2	6	
1	31		25	3	4	1	3	104		5	
1	6		8	1	2		2	17		2	
4	22		40	3	1	1	1	33	1	2	
1	67		67	11	10			90	4	12	5
1	38		28	7	7			48	3	5	5
1	10		12	1	3			7	1		
	27		16	3	3			28	4	2	
	12		11	2	2			18	1	1	
1	7		5	1	2			14			
2	26		16	4	2			23	3		
4	30		25	3	2		1	26			
1	45		18	5	4	1	4	38	1	2	
13	60		69	12	5	1		112	4	7	
4	23		18	4	1			47	2	3	
16	103	1	53	6	2	1	2	68	4	3	
11	98		65	7	6		1	118	5	4	2
9	75		66	6	5		1	96	4	4	2
	10		6	2	2			11	4	1	
1,061	5,661	3	5,956	785	407	95	101	8,078	178	463	58

TABLE XIV—REPORTED BIRTHS IN ILLINOIS, BY COUNTIES AND PRINCIPAL CITIES AND TOWNS, JULY 1, 1919 TO JUNE 30, 1920, INCLUSIVE.

Counties with important cities and towns.	Total July 1, 1919 to June 30, 1920 inclusive.	Counties with important cities and towns.	Total July 1, 1919 to June 30, 1920 inclusive.
The State.....	114,678	Lawrence County.....	345
Adams County.....	1,027	Lee County.....	377
Quincy.....	633	Livingston County.....	815
Alexander County.....	372	Logan County.....	492
<i>Cairo</i>	206	<i>Lincoln</i>	200
Bond County.....	293	Macon County.....	1,431
Boone County.....	212	<i>Decatur</i>	1,029
Brown County.....	150	Macoupin County.....	1,152
Bureau County.....	783	Madison County.....	2,327
Calhoun County.....	187	<i>Alton</i>	541
Carroll County.....	230	<i>Granite City</i>	297
Cass County.....	343	Marion County.....	635
Champaign County.....	1,171	<i>Centralia</i>	285
<i>Champaign</i>	287	Marshall County.....	234
<i>Urbana</i>	181	Masson County.....	316
Christian County.....	680	Massac County.....	231
Clark County.....	366	McDonough County.....	460
Clay County.....	372	McHenry County.....	452
Clinton County.....	555	McLean County.....	1,235
Coles County.....	739	<i>Bloomington</i>	423
<i>Mattoon</i>	280	Menard County.....	241
Cook County.....	53,927	Mercer County.....	335
<i>Chicago</i>	47,976	Monroe County.....	202
<i>Chicago Heights</i>	458	Montgomery County.....	753
<i>Cicero</i>	689	Morgan County.....	593
<i>Evanston</i>	956	<i>Jacksonville</i>	262
<i>Maywood</i>	160	Moultrie County.....	322
<i>Oak Park</i>	1,060	Ogle County.....	429
<i>Blue Island</i>	232	Peoria County.....	1,457
Crawford County.....	393	<i>Peoria</i>	1,044
Cumberland County.....	278	Perry County.....	477
DeKalb County.....	507	Piatt County.....	285
<i>DeKalb</i>	109	Pike County.....	473
DeWitt County.....	383	Pope County.....	56
Douglas County.....	462	Pulaski County.....	229
DuPage County.....	506	Putnam County.....	155
Edgar County.....	456	Randolph County.....	535
Edwards County.....	141	Richland County.....	261
Effingham County.....	351	Rock Island County.....	1,730
Fayette County.....	472	<i>Moline</i>	221
Ford County.....	338	<i>Rock Island</i>	495
Franklin County.....	692	Saline County.....	647
Fulton County.....	858	Sangamon County.....	1,829
<i>Canton</i>	203	<i>Springfield</i>	1,094
Gallatin County.....	287	Schuyler County.....	274
Greene County.....	434	Scott County.....	96
Grundy County.....	287	Shelby County.....	570
Hamilton County.....	222	Stark County.....	174
Hancock County.....	444	St. Clair County.....	2,603
Hardin County.....	152	<i>Belleveille</i>	508
Henderson County.....	140	<i>East St. Louis</i>	1,364
Henry County.....	815	Stephenson County.....	732
<i>Kewanee</i>	356	<i>Freeport</i>	461
Iroquois County.....	671	Tazewell County.....	668
Jackson County.....	755	<i>Pekin</i>	211
Jasper County.....	323	Union County.....	374
Jefferson County.....	473	Vermilion County.....	1,617
<i>Mt. Vernon</i>	189	<i>Danville</i>	740
Jersey County.....	253	Wabash County.....	259
JoDavies County.....	344	Warren County.....	377
Johnson County.....	137	<i>Monmouth</i>	216
Kane County.....	1,694	Washington County.....	310
<i>Aurora</i>	842	Wayne County.....	309
<i>Elgin</i>	421	White County.....	356
Kankakee County.....	691	Whiteside County.....	659
<i>Kankakee</i>	248	Will County.....	1,622
Kendall County.....	151	<i>Joliet</i>	564
Knox County.....	742	Williamson County.....	1,177
<i>Galesburg</i>	436	Winnebago County.....	1,506
Lake County.....	1,156	<i>Rockford</i>	1,281
<i>Waukegan</i>	380	Woodford County.....	417
LaSalle County.....	1,672		
<i>LaSalle</i>	349	Total all counties.....	114,678
<i>Ottawa</i>	207		
<i>Streator</i>	315		

* No births reported for this period for the two wards of Elgin City in Cook County

FISCAL YEAR BIRTH SUMMARY.

Year.	Population January 1.	Total births.	Birth rate per 1,000 population.
1918-1919.....	6,359,102	106,457	16.7
1919-1920.....	6,485,098	114,678	17.7

Births actually reported, year of 1919, with estimated "normal" for reports, and delinquencies estimated for all counties of Illinois, based on population as of July 1, 1919.

Typhoid fever death rates for Illinois, years of 1905-1919, inclusive.

Deaths from pulmonary tuberculosis among the bituminous coal miners of Illinois, years of 1916, 1917 and 1918.

In addition to these special reports, the division has been called upon for rate tables and comparisons in order to satisfy the constantly increased number of requests from editors, newspaper correspondents, trade papers, collegiate instructors and other teachers, public health nurses and other interested persons.

As a result of its final success in getting the records of 1916 into proper form, the division is able to present herewith (see Table XV) for the first time comparative statistics of births and deaths for the State of Illinois for the years 1916, 1917, 1918 and 1919, the four years which have passed since the present vital statistics law became effective.

COOPERATION OF OUTSIDE ORGANIZATION

As has been the custom in previous years, the division has assisted various local and civic organizations in improving birth and death registration in their localities, and has supplied data on infant mortality to public health nurses, child welfare associations and others interested in the betterment of conditions of early life.

The files of the division have also been made available for the use of several officers of the United States Public Health Service, who, in the course of their surveys of industrial conditions in various parts of the State, found it necessary to check their records with the death certificates on file from these points.

MISSIONARY WORK

While much good has been accomplished in securing more complete registration of births and deaths by the activities of extra-governmental, medical and social organizations, such activities have usually been sporadic in character, and consequently it has been found that the department must rely upon its own resources in carrying out a continuous campaign of education and stimulation.

During the past fiscal year, the Director of the State Department of Health has placed at the disposal of the Division of Vital Statistics the part-time services of the several district health officers of the department to be devoted to the checking up of local registrars and particularly those disposed to be negligent or tardy in the performance of their duties.

TABLE XV—STATISTICS OF BIRTHS AND DEATHS FOR THE STATE OF ILLINOIS—THE YEARS OF 1916, 1917, 1918 AND 1919 COMPARED.

	1916			1917			1918			1919		
	State total.	Chicago.	State exclusive of Chicago.	State total.	Chicago.	State exclusive of Chicago.	State total.	Chicago.	State exclusive of Chicago.	State total.	Chicago.	State exclusive of Chicago.
Population estimated—July 1.....	6,152,257	2,497,722	3,654,535	6,234,995	2,547,201	3,687,794	6,317,733	2,596,681	3,721,052	6,442,790	2,675,926	3,766,864
Births.....	114,298	47,769	66,529	108,896	49,556	59,340	117,055	49,707	67,348	108,094	44,051	64,043
Birth rate per 1,000 of population.....	18.6	19.1	18.2	17.4	19.4	16.0	18.5	19.1	18.1	16.8	16.5	17.0
Deaths—total from all causes.....	81,346	36,304	45,041	86,231	38,055	48,176	103,138	44,605	58,533	77,394	33,494	43,890
Death rate per 1,000 of population.....	13.2	14.5	12.3	13.8	14.9	13.0	16.3	17.1	15.7	12.0	12.5	11.7

The division placed in the hands of the district health officers lists of the delinquent local registrars located in their several districts, with the result that delayed reports were cleared up more effectively than ever before.

It is believed that a continuation of the plan of including in the duties of the district health officers a general supervision over local registrars in their districts, will have a tremendous effect upon birth and death registration in Illinois, without imposing any special burden upon the district health officers.

In addition to the very voluminous correspondence through which the division has endeavored to instruct local registrars and to advise physicians, coroners and undertakers as to the requirement of the law, the assistant registrar of vital statistics and other representatives of the division have made addresses at meetings of undertakers and coroners, held at different points in the State, while a district health officer assigned to the division has presented a paper on "vital statistics" before the Illinois Academy of Science at its annual meeting at Danville, and addressed chautauqua meetings at Mt. Zion and Avon on the importance of complete birth registration.

The staff of the division has encouraged the visits of local registrars, district health officers, physicians and other persons at the offices at Springfield, and have endeavored to make these visits a source of instruction and a means of closer cooperation.

COMPENSATION OF LOCAL REGISTRARS

The Illinois law provides that local registrars shall receive from the county clerk, on statement issued by the State Department of Health, fees for the registration of births and deaths at the rate of 25 cents for each certificate of birth, stillbirth or death, when the total number for the year is less than 5,000.

While the fee is small, the registrars regard it as very important, since they are required for this compensation to make twelve monthly reports to the State Department of Health and twelve monthly reports to the county clerk annually and to submit each annual report to the Department of Health and to the county clerk at their own expense, besides being required to make a complete monthly record of all certificates for their own offices.

The experiences of the past four years under the present law have shown that in order to have complete and proper registration and regular reports from each of the 1,500 districts, the registrars must be made to understand that the Department of Health is concerned in having fees paid promptly at the close of each calendar year. To this end, an earnest effort is being made to have all record of fees for the year 1920 ready at the earliest possible moment, so that as far as possible, the fees may be paid on January 10, 1921. No appropriation was made by the County

Board of Commissioners of Cook County for the payment of fees due the more than 80 registrars residing in that county, until 1919, and at that time there were fees due to these registrars for the years 1916 to 1918 inclusive, while the only appropriation made was understood to be applicable in payment for birth reports only.

Because of vexatious delays on the part of the Cook County board, the registrars of births and deaths in the city of Chicago and outside in the county, were seriously handicapped.

As a result of persistent appeals made through the office of the Attorney General, it is understood that there will now be no delay in the payment of fees to the registrars of Cook County and it is likely that the registration service will be better in the future.

BIRTH REGISTRATION

Engraved certificates of registration of births which have been furnished by the division to the parents of all children whose births have been properly registered, have proved of great aid in proving the accuracy of birth records as well as increasing the number of these records. The registration of births in Illinois, however, is not yet satisfactory. Approximately 15 per cent of the certificates received by the department are incomplete. This means that approximately 16,000 incomplete reports are received each year requiring 70 letters to be written on each of the 280 working days of the year. This clerical service, the magnitude of which was not appreciated in providing for the personnel of the past fiscal year, will require the full time of at least two additional typists for the fiscal year beginning July 1, 1920.

RECOMMENDATIONS

The experiences of the past fiscal year have indicated conclusively the acute need of additional equipment, particularly certificate files, correspondence files, card files, maps and dictionaries. Without the addition of these files the proper and orderly development of the division's records will be practically impossible. The division also needs suitable calculating machines for the preparation of statistical data.

It is suggested that section 4 of the present registration law should be amended to eliminate all township clerks as registrars, whether by providing for compulsory combination of all townships with important cities or villages in all townships, and constituting the county or village clerk as registrar or by eliminating all town clerks of all cities and villages and providing for the appointment of local registrars of each district by the Department of Public Health.

It is also suggested that section 18 of the registration law be amended so as to eliminate as part of the duty of the local registrars the requirement to send copies of birth and death records to county clerks and to have the law provide that such copy shall be made and forwarded to the county clerks by the Division of Vital Statistics.

Inasmuch as it has been found that many of the original certificates forwarded by local registrars are faulty and deficient in character, and require extensive correction in the Division of Vital Statistics, the records in the hands of the county clerks can never be satisfactory so long as they are made up largely of these faulty certificates, but could be made complete and satisfactory if the county clerks had in their possession copies of certificates corrected by the Division of Vital Statistics.

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

DR. C. W. EAST, *Chief*

The Division of Child Hygiene and Public Health Nursing of the State Department of Public Health divides its activities into two principal divisions, the first of which is devoted to the development of activities for the conservation of child life and the second, to the establishment and general supervision of public nursing service throughout the State of Illinois.

The first organized child welfare work of the State Department of Public Health was begun a number of years ago in the establishment of clinics for the reeducation of crippled children following a very general prevalence of anterior poliomyelitis throughout the nation. This prevalence of infantile paralysis caused a searching investigation to be made to locate children crippled by this disease when the true nature of the illness had not been recognized. The results were such as to justify the establishment of a definite clinical service which has been maintained and expanded since that time and which has remained one of the important functions of the Division of Child Hygiene and Public Health Nursing in the State Department of Public Health as created under the Civil Administrative Code. This work for crippled children has progressed so satisfactorily during the past fiscal year that the demand for service has exceeded the ability of the division to meet all needs. This work will be dealt with in another section of this report.

COOPERATIVE WORK

The division has responded repeatedly to requests from other divisions for assistance and this is especially true of the nursing staff. During December, 1919, and January, 1920, in addition to their own work, the nurses assisted in a comprehensive survey of the city of Alton conducted by the Division of Surveys and Rural Hygiene. They also assisted the Division of Tuberculosis in an intensive survey and clinical work at the same place which featured the last week of the survey.

STATE SURVEY OF PUBLIC HEALTH NURSING SERVICE

During the year, steps were taken to coordinate the nursing services which have been established under the auspices of the Illinois Tuberculosis Association, the American Red Cross, and other agencies under the general leadership of the State Department of Public Health. This

cooperative work required a careful study of the existing nursing agencies. A survey of nursing service was consequently undertaken in November, 1919, and the register of nursing service has been kept corrected up to the time that these pages are written. The extent of nursing service from November 1, 1919, to June 30, 1920, is shown in the accompanying table. (See Table XVI.)

TABLE XVI—REPORT OF PUBLIC HEALTH NURSING, NOVEMBER 1, 1919-JUNE 30, 1920

1. Public health nursing in Illinois. (Cook County not included.)	
Number of counties with some form of public health nursing.....	60
Number of counties having rural public health nursing.....	49
Total number of organizations employing public health nurses.....	141
Tuberculosis	40
American Red Cross.....	29
General services	16
Boards of education.....	40
Industries	9
Child welfare	7
(26 organizations are doing some form of child welfare work in addition to other work.)	
2. Public health nurses in Illinois. (Cook County not included.)	
Total number of public health nurses.....	199
Tuberculosis	44
American Red Cross.....	38
General	49
School	51
Industrial	10
Child welfare	7
3. Visits.	
Number of counties in State visited.....	36
Number of cities in State visited.....	49
Number of visits to child welfare stations.....	12
Number of visits to orthopedic stations.....	5
Number of visits to tuberculosis stations.....	7
Number of visits to psychopathic stations.....	1
Number of visits to dental stations.....	2
Number of visits to eye clinic stations.....	6
Total number of visits.....	70
4. Addresses.	
Talks given to nurses.....	28
Talks given to other groups.....	17
Total number	45
5. Attendance at association meetings.	
National	5
State and local.....	6
Total number of days in attendance.....	36
6. Number of days away from Springfield.....	131
7. Detail information on file in office.	

ETTA LEE GOUDY, R. N. (Mo.)
State Supervisor, Public Health Nursing.

The nurses of the staff have also visited various local nursing services for purposes of observation and to afford advice and encouragement to local workers. In almost all instances these visits were especially invited. There is no doubt as to the value of this kind of supervision on the part of the State Department of Public Health.

The establishment of new services has usually been attended by the help of this division and in many cases, the preparatory work for such establishment has been initiated by us. This part of our work will continue as an important function under the cooperative working agreement which, by consent of all participating agencies, places the general supervision of public nursing service in the hands of the State.

COOPERATIVE NURSING AGREEMENT

In the nation-wide effort to secure coordination in public service nursing through the cooperation of State governmental agencies and the larger National agencies engaged in nursing service, Illinois has taken an important part. The only two agencies of national character which have taken a very important part in the establishment of nursing service, have been the American Red Cross and the National Tuberculosis Association, and the preliminary nation-wide agreements essential to satisfactory cooperation are consequently entered into between the National Organization of State Health Authorities, the National Tuberculosis Association, and the central offices of the American Red Cross. In the preliminary conferences and in the preparation of this national agreement, the State health authorities were represented by the director of the Illinois State Department of Public Health as executive officer of the National Conference of State Health Authorities; while the National Tuberculosis Association was represented by the assistant director of the Illinois State Department of Public Health serving as a committee of one to represent the executive committee of that organization.

As these pages are written, there has been prepared a memorandum of agreement applicable to the State of Illinois, entered into by the director of the State Department of Public Health, the president of the Illinois Tuberculosis Association, and the manager of the Central Division of the American Red Cross. The various provisions of this agreement have already been declared satisfactory to all parties concerned and there is every likelihood that it will become effective substantially as written. This agreement will impose upon the nursing department of the Division of Child Hygiene and Public Health Nursing important new functions which will contribute materially to the betterment of every phase of public health work throughout the State of Illinois. The Illinois Nursing Agreement is as follows:

I. The following memorandum contemplates the acceptance of the general principles of certain agreements entered into between the Conference of State and Provincial Health Authorities, the American Red Cross, the National Tuberculosis Association, and the National Organization for Public Health Nurses, to-wit:

A memorandum of policy of cooperation between the State health authorities and the National Tuberculosis Association as amended December 1, 1919; a suggestion of principles for the cooperation of the Red Cross with the State Department of Health and other agencies in the field of public health nursing with amendments approved by the executive committee of the Conference of State and Provincial Health Authorities, July 29 and October 25, 1919; an agreement between the American Red Cross, the National Tuberculosis Association, and the National Organization of Public Health Nursing for the promotion of public health nursing and a suggested plan for cooperation between the Red Cross, the state tuberculosis associations in states in which there is no Bureau of Public Health Nursing and no state supervising nurse within the state department of health.

II. The State Department of Public Health will employ a supervising nurse who shall, at all times, be impartial and unprejudiced in her relationship with the American Red Cross, the Illinois Tuberculosis Association and all other participating agencies.

III. There shall also be attached to the State Department of Public Health an assistant supervisor of nursing service for the American Red Cross and an assistant supervisor of nursing service for tuberculosis. The assistant supervising nurse for the Red Cross may be compensated in whole or in part by the American Red Cross and the assistant supervisor of tuberculosis nursing may be compensated in whole or in part by the Illinois Tuberculosis Association. In the selection of these assistant supervising nurses, the interested agencies will have a voice so far as may be consistent with the civil service laws of the State of Illinois. When the salary of the assistant supervising nurse is wholly paid by either extra-governmental agency, the interested agency may select the assistant supervising nurse with the approval of the State Department of Public Health. In any event, the assistant supervising nurses will act under the supervision and direction of the State Department of Public Health and these assistant supervising nurses, together with the State supervising nurse, will constitute a supervisory body of public health nursing in the State.

IV. The State Director of Public Health, together with duly authorized representatives of the American Red Cross and the Illinois Tuberculosis Association and officials of other extra-governmental cooperating agencies, will constitute a standing committee to confer on questions affecting the relationship of the State Department of Health to extra-governmental nursing services and the relationship of the extra-governmental services to each other. Questions of policy will be determined by the standing committee, which will serve as a committee of review of the supervisory body of nurses. It is understood that neither the State supervising nurse, nor assistant supervising nurses shall represent their organizations on this standing committee.

V. The supervising nurse acting for and under the direction of the Director of Public Health, shall have general supervision over all public health nursing of the State, whether publicly or privately maintained. It will be the policy of the State Department of Public Health in the promulgation of rules, programs, policies or procedures, to take no action tending to affect or disturb nursing service supported in whole or in part by extra-governmental agencies without conference with such extra-governmental agencies through their duly designated representatives.

VI. The American Red Cross and the Illinois Tuberculosis Association will recommend to public health nurses employed in whole or in part with funds furnished by them or to nurses otherwise affiliated with them a whole-hearted acceptance and concurrence in the supervision of the State Department of Public Health, although nothing in this paragraph shall be construed to interfere with concurrent supervision or contact by the Red Cross or the Illinois Tuberculosis Association through their supervising nurses or otherwise with their several nursing services.

VII. Before submitting nursing plans or programs for any community in which nurses are now employed by the American Red Cross or with tuberculosis funds or in affiliation with the Illinois Tuberculosis Association or in which it is contemplated that funds derived from extra-governmental services will be used in whole or in part in carrying out such plans or programs, the State Department of Public Health will confer with the Illinois Tuberculosis Association and the American Red Cross, such conferences to be held prior to the submission of such plans to the local communities or local agencies. Neither the Illinois Tuberculosis Association nor the American Red Cross will institute or establish nursing activities in any community without submission of the plans or programs to the representatives of the other agencies parties to this memorandum.

VIII. The American Red Cross and the Illinois Tuberculosis Association will recommend as a general policy to their affiliated societies, or for plans in the expenditure of funds, that general public health nurses be employed rather than nurses engaged in specialized fields. But nothing in this paragraph shall interfere with the employment of special nurses in communities where the importance of special work appears to the standing committee to justify the employment of such special nursing service. As a general proposition, it is accepted that special tuberculosis nurses may be properly employed wherever there is established, or in the opinion of the standing committee should be established, a permanent tuberculosis dispensary; that special child welfare nurses shall be employed where there are established or, in the opinion of the standing committee, should be established permanent welfare stations or clinics or other specialized nursing service as may be required.

IX. It is specifically understood that where general public health nurses are employed by funds from more than one agency, the nursing service shall be designated and known as a community nursing service rather than the nursing service of any one of the several participating agencies.

X. The organizations concerned in this understanding accept the following qualifications for nurses engaged in public health nursing service: four months in an approved course in public health nursing service, or eight months in a general public health nursing organization. It is further understood in face of the great demand for public health nursing service, that said organizations may take temporary appointments of nurses who have spent two or more months with a general public health nursing organization that is prepared to take on nurses and give them systematic instruction and supervision. When such appointment is made it should be definitely understood by both the nurse and the community that the appointment is a temporary one, and that it will necessitate close supervision on the part of the State organization with which the service is affiliated and that the nurse will be relieved at a later period to take up further preparation. It is definitely understood that nothing in this paragraph shall affect the appointment of nurses already engaged in nursing service by the participating agencies or by affiliated agencies.

XI. In the establishment of any nursing service by a participating agency an earnest effort will be made to secure the cooperation of local health authorities before any permanent plans or programs are adopted.

XII. The State Department of Public Health will prepare and distribute forms or reports of nursing service which will be distributed through the American Red Cross and the Illinois Tuberculosis Association to their affiliated nursing services with the understanding that duplicate reports will be submitted at reasonable intervals, both to the State Department of Public Health and to the organization with which the nursing service is affiliated. The State Department of Public Health in the preparation of these report blanks will take into consideration the needs and desires of the several affiliated agencies.

XIII. It is understood that any one of the participating agencies may withdraw its approval of this memorandum and may withdraw its participation in this cooperative plan after thirty days' notice of such withdrawal has been made to the participating agencies by a duly authorized representative.

XIV. It is definitely understood that in the carrying out of the provisions of this memorandum the Director of the State Department of Public Health must act in conformity with the Civil Administrative Code and the laws of the State of Illinois, and that he cannot delegate in any way the duties, obligations or authority imposed upon him by the statutes.

LITERATURE

During the year the division has prepared a "Diet List for Infants and Children" which has been in constant demand. In fact, the first large edition is already exhausted and a new edition, entirely revised and rewritten, is now in process of preparation.

The division is also engaged in the preparation of a new edition of the circular "Better Babies" to take the place of the first edition of that very useful publication which is now entirely exhausted.

CONFERENCES

The division took an active part in the Better Babies Conference held by the department in connection with the Illinois State Fair. The conference during the past fiscal year was the best and largest that had ever been held until that time; but it is anticipated that the conference at the State Fair of 1920 will exceed all efforts in the past.

In these conferences hundreds of children are weighed, measured, examined and scored and the scores are interpreted and advice is given on the basis of the score to the parents of each child.

This State conference has furnished the inspiration for many similar conferences throughout the State. The division has assisted in conferences at Libertyville, Joliet, Aledo, Paxton, Pinckneyville, and Coulterville.

All members of the division staff have repeatedly responded to invitations to speak at public gatherings throughout the State, appearing before conventions, clubs and civic bodies.

As a result of these conferences, the division has been instrumental in establishing or supporting infant and child welfare stations at East St. Louis, Alton, Moline, Princeton, Streator, Galesburg, Joliet and Champaign. In some instances a medical officer of the division has conducted the weekly clinics until permanently established in local medical hands.

CLINICAL WORK

The reconstruction work for crippled children, initiated a number of years ago, has grown with remarkable strides and now requires fully one-half the time of the staff of the division.

Regular clinics, at definite intervals are held at Springfield, Freeport, Rockford, Waukegan, Elgin, Aurora, Cicero, Blue Island, Joliet, Kankakee, Ottawa, Streator, Princeton, Rock Island, Moline, Galesburg, Quincy, Monticello, Champaign, Danville, Alton, East St. Louis, and Mattoon. Clinics are also held irregularly at Jacksonville and Bloomington.

As shown in the accompanying table (Table XVII), 166 clinics have been held during the year with a total number of 1,498 patients. The total number of visits made by these patients to the clinics was 3,026. Shoes, braces and appliances were fitted and supplied in 919

cases and special muscle training was given in 585 cases. Of the total number of patients 557 were victims of infantile paralysis for whom these clinics were originally instituted.

TABLE XVII.

	Number of clinics.	Number cases visiting clinics.	Number visits to clinics.	Shoes, braces, casts and appliances.	Received special muscle training.	Number of infantile paralysis cases.	Cases referred to family physician.	Number Wasserman tests advised.	Number receiving hospital or institutional care.	Operations advised.	X-Rays.	Number malnutrition cases.
Alton.....	5	51	119	30	19	11	4	5	1	6	5	10
Aurora.....	6	42	96	34	26	25	6	4	3	2	4	3
Blue Island.....	6	40	68	25	17	16	5	4	3	5	5	5
Champaign.....	6	58	76	26	17	11	8	2	2	4	12	9
East St. Louis.....	5	52	81	20	17	13	11	10	5	9	9	4
Freeport.....	9	155	282	86	55	60	22	6	1	14	14	26
Jacksonville.....	3	33	49	22	10	8	4	3	2	3	5	6
Joliet.....	5	78	129	38	22	20	13	7	7	8	15	12
Kankakee.....	7	58	151	30	24	26	6	5	5	6	6	2
Moline.....	5	43	83	30	15	16	4	3	3	3	3	4
Monticello.....	5	54	94	40	26	23	3	-----	7	1	4	7
Oak Park.....	6	30	51	23	16	23	2	2	3	2	5	-----
Cicero.....	}	30	75	21	13	18	2	1	2	2	3	5
Ottawa.....												
Streator.....												
Quincy.....	6	110	114	42	23	18	9	4	4	5	7	11
Rockford.....	6	64	101	42	25	23	10	4	5	7	5	4
Rock Island.....	5	15	32	9	11	6	1	-----	1	-----	-----	1
Springfield.....	45	247	801	187	92	92	14	8	28	10	46	27
Waukegan.....	5	42	110	31	30	26	3	2	5	1	3	3
Elgin.....	4	33	41	18	15	14	4	1	2	4	5	2
Galesburg.....	3	56	76	30	19	18	14	5	4	6	6	7
Princeton.....	5	50	82	37	19	27	4	2	3	6	2	8
Bloomington.....	1	14	14	8	8	4	-----	1	-----	2	3	-----
Danville.....	7	90	193	55	42	35	15	2	7	9	12	10
Total.....	166	1,498	3,026	919	585	557	173	78	108	121	184	180

DIVISION OF SURVEYS AND RURAL HYGIENE

BAXTER K. RICHARDSON, *Acting Chief*

The great wave of development that has marked the trend of public health administration in Illinois during the fiscal year ending June 30, 1920, has greatly limited the scope of work done by the Division of Surveys and Rural Hygiene. Instead of covering the broad field of service indicated by its title, the division has been surcharged with responsibilities relating wholly to sanitary surveys. Cities all over the State have awakened to the great public service rendered by an efficient and adequate health department; they have realized that a great economic saving can be effected in this way. Along with this awakening on the part of local authorities has come to them also the perplexing fact that public health administration offers problems manifold and complex. As local authorities have come to realize that experienced men alone can determine the exact character of their particular public health problems and offer practical solutions therefor, they have turned to this division for assistance. Services of this character in the moderate sized community have taken up practically all of the time of the Division of Surveys and Rural Hygiene during the past year.

EDUCATIONAL ACTIVITIES

A follow-up educational campaign is a new feature added to the program of a general health and sanitary survey of this division. The features of these campaigns are a series of newspaper articles and a series of conferences. The newspaper articles are carefully prepared stories based upon, and growing out of, the survey findings. The conferences are attended by representatives of the State and local governments and of extra-governmental agencies that are or should be interested in public health work. In these conferences are discussed the health problems of the community, as well as the ways and means of their solution. The general educational influence and the practical public health administrative results that have grown out of these campaigns are so immediate and far reaching that the educational follow-up work is now considered an integral part of every survey, and regarded as a definite function of this division.

In spite of the fact that requests for surveys have been greatly in excess of the capacity of the division, its policy has remained thoroughness rather than expansiveness of service. The time required for making

a complete and exhaustive study varies, according to the size of the community, from three to four months. A resume that shows where surveys have been carried out during the year follows:

ALTON SURVEY

At the request of the Board of Trade, which represented a number of local organizations, the survey of Alton, Madison County, was undertaken and carried out. Through a house-to-house canvass the exact sanitary conditions that prevailed in the city were determined, and much valuable information bearing upon the health history of the community was collected.

The discovery of a score of unreported cases of scarlet fever represents one leading feature of this survey. This discovery of a potential epidemic that threatened the city and its subsequent suppression served as an important, practical demonstration of the value of efficient public health administration.

That the Madison County Medical Society financed the survey is worthy of note. During that part of the survey which dealt with the physical examination of school children local physicians also gave unsparingly of their time. Active and whole hearted cooperation of this character on the part of practicing physicians is especially encouraging to public health officials.

Immediately following the general health and sanitary survey, the State Department of Health cooperated with the Illinois Tuberculosis Association in an intensive tuberculosis survey of Alton. This division was placed in charge of the field work of this survey and was also responsible for a large part of the publicity campaign incident thereto.

Following the survey this division carried out for the first time an educational campaign as described above.

MOLINE SURVEY

The survey of Moline, Rock Island County, was carried out upon the same general lines as that in Alton, and was undertaken in response to a joint request from the city and the Moline Community Council.

Especial interest in the study of Moline arises from the peculiar situations that surround the city. It is a community purely industrial, characterized by rapid growth and a strong foreign element, with few negroes. With its 30,709 people, Moline forms the hub from which radiates the great industrial community made up of Davenport, Rock Island, East Moline and Silvis. All these join hands in supplying the labor required in the great manufacturing plants of Moline that send out farm implements, wagons, tractors and engines to all parts of the world.

Unlike the other members of this great industrial community, Moline presents a life-long history of endemic typhoid fever incidence that has been intensified from time to time by general outbreaks, severe

in nature. This peculiar fact encouraged anxiety on the part of local officials and operated as a leading factor in the request for assistance from the State.

The survey showed that the typhoid fever history of Moline is closely related to a large number of privy vaults and the users of a large number of shallow wells found in the city. Upon the basis of data collected, this division was able to offer practical suggestions and recommendations for solving not only the typhoid problem but also for the establishment of an efficient local health department.

QUINCY SURVEY

As these pages are written the division is closing an inquiry into the sanitary and health conditions that prevail in Quincy, Adams County. Unusual interest attaches to this survey for a number of reasons. On the one hand the city has been without a comprehensive public health administration; in spite of its manifold and varied industries it has shown no material gain in population during the last ten census years; its white population comes largely from English and German extraction in about equal numbers while the negro population is considerable. On the other hand the city has been organized into a public health district under a State law that provides for raising adequate funds and for establishing the necessary machinery for executing public health administration; the Chamber of Commerce and clubs such as the Rotary, Kiwanis and Lions are now united with a singleness of purpose to create a large and wholesome community atmosphere charged with health and progress.

Under these circumstances, the survey findings may easily be reduced to a practical foundation for the larger public health administration that will be installed at the opening of the next fiscal year. Quincy has the enviable advantage of being financially prepared to follow out in the fullest possible way the suggestions and recommendations that will result from the study.

The survey in Quincy was undertaken at the request of the organizations that created the public health district. Its purpose was to find out the problems, submit practical solutions, and prepare the field for the successful inauguration of the new administration.

GENERAL ACTIVITIES

In addition to the three exhaustive studies described above this division carried out a general inquiry into the public health activities of all communities in Illinois with more than 5,000 inhabitants, Chicago excepted. This survey showed what the several local public health needs are; it described the efficiency of local administration and the expenditures therefor; it indicated the general local attitude toward public health administration and suggested the nature of local problems. The information collected gives a splendid idea of the earning power of a dollar in public health service.

The division prepared and displayed an unusually attractive exhibit at the State Fair. Through graphic and pictorial illustrations the services and functions of the division were shown in a manner that was easily and readily understood by the average visitor. A large number of visitors from rural districts and the distribution of literature were the principal benefits resulting from the exhibition.

The Division of Surveys and Rural Hygiene has constantly co-operated with the other divisions of the Department of Public Health. It has discovered violators of the law that interest especially the Divisions of Communicable Disease and Vital Statistics; it has collected much information of great value to the Divisions of Tuberculosis and Child Hygiene.

PROPOSED FUTURE DEVELOPMENT

A growing demand for standardizing special branches of public health administration suggests the expansion of this division along that line. During recent months numerous agencies have sought information bearing upon an approximately definite per capita expenditure necessary for efficiently carrying on special activities such as infant welfare, tuberculosis, visiting nursing and kindred programs.

Because of its limited personnel the division has not been able to carry out a comprehensive rural program. The active and extensive need for such a program suggests the creation of a sub-division to meet the demand.

The large number of communities that are taking advantage of the present type of exhaustive studies carried on by this division, suggests an increase in personnel in order that these surveys may be made with more dispatch. An increase in personnel is also necessary if modified surveys of special subjects are undertaken.

Recommendations for future developments of this division are, therefore, three-fold. First, the services now rendered should be more expansive. Secondly, a sub-division should be created to meet the rural problem. Thirdly, modified surveys should be undertaken. Along with all of these activities the educational work done by the division can be greatly increased.

PROPOSED LEGISLATION

A law providing for the establishment of public health districts, and the appointment in them of full time health officers, would greatly increase the effective functioning of this division.

DIVISION OF DIAGNOSTIC, BIOLOGICAL AND RESEARCH LABORATORIES

The year ending June 30, 1920, has been an important one in the history of the Division of Laboratories of the State Department of Health. The laboratory personnel was seriously depleted by the call of military service, but has now been restored to normal and the scope of work undertaken during the past year has not only equaled the pre-war status but has gone far beyond.

There has been somewhat of a handicap to the work of the division on account of the fact that at various times four different persons have acted in the capacity of chief. Martin DuPray, the former chief, left the service in August, 1919; Miss Caroline Steele entered the work for a short time after which Miss Eva Faught acted in that capacity. The present chief of the division assumed his duties in January, 1920. Despite this continuous disruption in the working forces, the standard of work has been maintained and the volume continually increased.

It has been the purpose of the department to separate entirely the Division of Diagnostic Laboratories from the Division of Biological and Research Laboratories, and this will be possible within the next few months when the Division of Biological and Research Laboratories will take possession of the laboratory buildings located north of Springfield and previously maintained by the State Department of Agriculture for the production of hog cholera serum. The Division of Diagnostic Laboratories will remain in the State House, and both laboratories will at that time be provided with adequate room for the carrying out of their extensive programs. During the past year, however, the two divisions have remained in the same quarters and under the same direction.

The Fifty-first General Assembly made certain increases in appropriations rendering it possible to increase the laboratory personnel. The Biological and Research Laboratories had assigned to them the chief of the division, an assistant bacteriologist, a laboratory helper, a stenographer and a shipping clerk. The Division of Diagnostic Laboratories had assigned to it a chief bacteriologist, an assistant bacteriologist, a laboratory helper and a stenographer.

A constant effort has been made to obtain a chief bacteriologist for the Division of Diagnostic Laboratories who would be able to relieve the chief of the division of the responsibility of routine diagnostic work so

that he may spend the time in the preparation of biological products. The salary provided for this position has not been sufficient to attract the proper kind of person and it is recommended that a provision for increased salary be made by the next General Assembly.

DIVISION OF DIAGNOSTIC LABORATORIES

THOMAS G. HULL, PH. D., *Chief*

During the past year there has not only been a material increase in the volume performed but in the scope of the work undertaken. The Diagnostic Laboratories now perform the following service:

Serology:

1. Complement fixation test in syphilis, (Wassermann test).
2. Complement fixation test in gonorrhea.
3. Complement fixation test in tuberculosis.
4. Agglutination test in typhoid fever:
 - (a) Microscopic (Widal test).
 - (b) Macroscopic.
5. Pneumococcus typing.

Bacteriology:

1. Sputum for tubercle bacilli.
2. Pus smears for gonococci.
3. Smears for Vincent's angina.
4. Swabs for diphtheria bacillus.
5. Feces for typhoid bacillus.
6. Feces for dysentery bacillus.
7. Urine for typhoid bacillus.
8. Blood for culture.
9. Pus for culture, (autogenous vaccine).
10. Sputum for culture.
11. Spinal fluid for culture.
12. Miscellaneous materials for culture, as milk, food and exudates.

Pathology:

1. Dogs' heads for rabies.
2. Blood smears for differential count.
3. Urine for routine analysis.
4. Spinal fluid for cell count and globulin test.
5. Feces examination for:
 - (a) Blood.
 - (b) Gall stones.
 - (c) Bile.

Histology:

1. Tissue for section and microscopical examination. (Facilities are not available for this work as routine matter at the present time, but preparations are being made so that it can be done in the near future.)

Chemistry:

1. Milk for fat test (Babcock test).
2. Urine for chemical analysis.
3. Spinal fluid for Lange's colloidal gold test.
4. Gastric contents for acidity.

Parasitology:

1. Blood smears for malaria parasites. .
2. Feces for parasites:
 - (a) Hookworm.
 - (b) Tapeworm.
3. Smears for treponema pallidum.

Entomology (as related to public health only):

1. Lice.
2. Fleas.
3. Ticks.
4. Mosquitoes.
5. Flies.

During the past year the laboratory personnel has been constantly watchful for means by which it can increase the value of its service to the physicians of the State. To this end there has been considerable research and the study and checking-up of procedures carried out by other laboratories.

The volume of work performed during the twelve months was two and one-half times greater than that carried out during the previous year. The largest increase in service was in the Wassermann test for syphilis, showing an increase from 2,672 to 13,139. Examinations of swabs for the Klebs Löffler bacilli (diphtheria), came next with a total increase of about four thousand swabs examined. The examination of pus for the detection of gonococcus infection has increased threefold, while the examinations of sputum for the presence of the tubercle bacillus have developed in number.

The examinations made at the Central Diagnostic Laboratories at Springfield during the twelve months of the past fiscal year, are shown in Table XVIII.

TABLE XVIII—WORK OF THE DIVISION OF DIAGNOSTIC LABORATORIES FOR THE YEAR JULY 1, 1919-JUNE 30, 1920.

	Diphtheria.	Typhoid-Widal tests.	Paratyphoid A.	Paratyphoid B.	Malaria.	Gonococci.	Tubercle bacilli.	Meningococci.	Wassermann tests.	Complement fixation tests tuberculosis.	Complement fixation tests gonorrhea.	Miscellaneous.	Total.
July.....	47	195	201	198	10	92	409	-----	782	-----	-----	16	1,950
August.....	107	171	170	168	18	69	438	-----	594	-----	-----	16	1,751
September.....	688	159	154	143	7	69	402	-----	749	-----	-----	6	2,377
October.....	452	135	135	135	3	112	444	-----	1,204	-----	-----	16	2,636
November.....	2,485	136	127	138	10	144	486	35	696	-----	-----	10	4,267
December.....	600	86	86	86	3	133	484	201	1,226	-----	-----	4	2,909
January.....	200	101	101	101	2	156	594	-----	1,163	-----	-----	8	2,428
February.....	226	100	96	117	2	134	489	-----	1,090	-----	-----	6	2,260
March.....	103	144	144	144	3	140	599	-----	1,364	-----	2	63	2,706
April.....	154	85	85	85	3	141	619	-----	1,333	4	21	58	2,588
May.....	146	86	86	86	6	129	612	-----	1,332	21	38	61	2,603
June.....	68	131	131	131	6	149	620	-----	1,606	42	54	83	3,021
Total.....	15,276	1,529	1,516	1,532	73	1,468	6,196	236	13,139	67	115	347	31,494

As indicated in Table XVIII, during the past fiscal year 31,494 specimens were examined as compared with 12,003 for the fiscal year 1918-1919; 10,500 for fiscal year 1917-1918 and 6,015 for fiscal year 1916-1917.

In addition to the central laboratories at Springfield, the State Department of Health maintains five branch laboratories especially designed for the examination of specimens where time is an important factor in determining the diagnosis. These laboratories have been located in the following places: East State Laboratory, Urbana; North State Laboratory, 7 West Madison Street, Chicago; North West State Laboratory, East Moline; South State Laboratory, Mt. Vernon and West State Laboratory, Galesburg.

During the early part of the year these laboratories examined swabs for the Klebs Löffler bacilli, meningococci and made Widal tests for typhoid. Through a lack of sufficient funds all work, especially the examinations for diphtheria bacilli, had to be discontinued. The work of these branch laboratories is indicated in Table XIX:

TABLE XIX—WORK OF THE BRANCH STATE LABORATORIES.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
East State Laboratories—													
Diphtheria.....	20	13	137	89	107	88	97	100	83	78	32	7	851
Widals—typhoid.....	8	11	18	25	—	—	—	—	—	—	—	—	62
Meningococci.....	—	1	—	—	—	—	—	—	—	—	—	—	1
North State Laboratory—													
Diphtheria.....	65	31	44	366	169	124	70	19	28	51	48	32	1,047
Widals—typhoid.....	11	13	19	15	—	—	—	—	1	—	—	—	59
Meningococci.....	3	—	—	—	—	—	—	—	—	—	—	—	3
South State Laboratory—													
Diphtheria.....	1	4	11	192	222	193	101	41	74	48	14	6	907
Widals—typhoid.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Meningococci.....	—	—	—	—	1	—	—	—	—	—	—	—	1
North-West State Laboratory—													
Diphtheria.....	2	4	21	50	—	33	38	20	20	32	18	5	243
Widals—typhoid.....	10	23	10	33	—	—	—	—	—	—	—	—	76
Meningococci.....	—	—	—	—	—	—	—	—	—	—	—	—	—
West State Laboratory—													
Diphtheria.....	—	—	—	—	87	16	16	8	11	15	—	10	163
Widals—typhoid.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Meningococci.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Total.....	120	100	260	770	585	454	322	188	217	224	112	60	3,412

The work of the laboratories of the State Department of Health, is rendered without charge. The value of this service, measured not in the prevention of illness and the saving of human life, but rather in the ordinary charges for laboratory service, is much greater than has been generally believed. The following table (Table XX) indicates the amount of money saved to the physicians and the people of the State of Illinois by the free service rendered by the central laboratories and the

branch laboratories during the past fiscal year, amounting to something over \$113,000:

TABLE XX.

	Central laboratory.	Branch laboratories.	Total.
July.....	\$ 5,706	\$ 360	\$ 6,066
August.....	4,828	300	5,128
September.....	7,260	798	8,058
October.....	8,949	2,250	11,199
November.....	12,758	1,764	14,522
December.....	9,043	1,362	10,405
January.....	8,248	957	9,205
February.....	7,696	744	8,440
March.....	9,324	651	9,975
April.....	9,207	672	9,879
May.....	9,237	336	9,573
June.....	11,004	180	11,184
Total.....	\$103,260	\$10,374	\$113,634

SHIPPING SERVICE

The preparation, shipment and distribution of mailing containers to physicians, agents and clinics, has become more and more of a problem. Each finished container sent out represents from 10 to 20 cents of State money. Among the thousands of containers distributed, some go astray, some are broken, some unused and some are employed to send specimens to other laboratories, in violation of the State laws forbidding their use for private purposes.

The Division of Diagnostic Laboratories has recently arranged a method of check-up on containers so that it may be ascertained in what locality the loss, if any, takes place. The division at the present time furnishes the following double mailing containers, complying with postal regulations: Wassermann outfits, containing sterile tube and bleeding needle; diphtheria outfits, containing sterile tube and cotton swab; sputum outfits, containing vial with 5 per cent carbolic acid; and fecal outfits, with vial containing sterile glycerin and with sterile swab. Single mailing tubes are distributed containing micro slides for the submission of pus and blood smears. Envelopes containing parchment paper are used for the collection of blood for Widal tests.

The following table (Table XXI) shows the record of mailing case containers as compared with the previous year, and it will be noted that practically four times as many containers were distributed during the past year:

TABLE XXI—DISTRIBUTION OF LABORATORY CONTAINERS.

	Sputum.	Wasser- mann.	Widal.	Micro- slides.	Diph- theria.	Others.	Total.
July.....	456	808	256	188	151	6	1,875
August.....	527	781	248	128	387	31	2,102
September.....	717	1,213	244	185	1,606	2	3,967
October.....	651	1,523	223	277	2,081	4	4,759
November.....	761	1,371	213	188	1,525	18	4,073
December.....	723	1,529	102	224	1,184	43	3,805
January.....	771	1,716	84	286	414	18	3,289
February.....	530	1,499	177	202	72	16	2,496
March.....	695	1,505	245	418	157	68	3,088
April.....	869	1,432	72	175	511	151	3,210
May.....	1,052	1,555	144	490	290	40	3,571
June.....	899	1,855	119	279	129	42	3,321
Total.....	8,651	16,787	2,157	3,018	8,504	439	39,556
Total for 1918-1919....	3,566	3,294	1,424	728	1,950	47	11,009

MOBILE LABORATORY

The mobile laboratory operated by the Division of Diagnostic Laboratories has been of considerable service during the past year in checking up diphtheria and meningitis outbreaks. The laboratory consists of a chest which can be shipped as baggage on the same train with the attendant, arriving at the destination at the same time. The contents of the chest varies according to the nature of the work in hand, but it contains under ordinary circumstances, microscope, incubator, burners, stains, slides, culture media and swabs. Close contact is kept with the central laboratory at all times that the mobile laboratory is in operation, in order that culture media or other supplies may be furnished in sufficient quantities.

During the past year the mobile laboratory has been called upon to meet emergencies at Anna, Rockford, Lewistown, Meekin, Salem and Elgin.

EDUCATIONAL WORK

It has been the policy of the division to encourage the members of the staff in advancing themselves through study and observation in the more advanced technique of laboratory procedure, so that all employees shall have a general working knowledge of every phase of laboratory diagnostic purposes and methods.

To this end, numerous divisional conferences have been held in which bacteriologic progress has been reviewed and special emphasis placed upon this progress in its relationship to public health problems. The benefits from these conferences have been demonstrated without question and as a result it has been found that the younger members of the laboratory staff have been able, in times of emergency, to assume advanced duties.

From time to time various members of the medical and nursing professions of the State have visited the laboratories for the purpose of

acquainting themselves with newer methods of laboratory technique, or to review their previous training. It has been the policy of the division to encourage such visits, and to give every possible facility to these visitors.

The United States Public Health Service, in the establishment of a school for diagnosis of tuberculosis in Springfield, has made laboratory procedure a part of the regular course, and instruction in this branch has been given regularly in the laboratories of the department.

The division has prepared a special exhibit, which was shown at the Illinois State Fair, demonstrating the relationship between bacteria and disease, the prevalence of bacteria in every day life and the means by which bacteria may be destroyed. The exhibit has caused considerable favorable comment, and requests for its use have been received from numerous schools and health centers.

BIOLOGICAL AND RESEARCH WORK

The Biological and Research Laboratories, to be under the direction of a separate division of the State Department of Health, were created by the last General Assembly. The duties of this division are to produce the biological products for free distribution necessary to the prevention and suppression of communicable disease and to develop more advanced laboratory procedures in the production of such products.

Owing to the cramped condition of quarters on the top floor of the State House, it proved impossible to establish two separate divisions and it also proved impossible to produce biological products on a large scale. Further, the increased demands upon the diagnostic laboratory, amounting to almost three times the demand of any previous year, has made it necessary to utilize all laboratory technicians in the diagnostic division.

It is now understood that the Division of Biological and Research Laboratories will be provided with special quarters, taking over the plant located north of the city of Springfield, originally created by the State Department of Agriculture for the production of hog cholera serum.

These laboratories are well adapted to the needs of the division, and it is expected that the State will be able to produce in these new quarters products which are now costing the public large amounts of money. In view of the greatly increased demands upon the Division of Diagnostic Laboratories, however, it will be necessary to materially augment the present laboratory staff if both of the laboratory divisions are to be adequately manned.

INTERDEPARTMENTAL COOPERATION

The Division of Diagnostic Laboratories is constantly in touch with several of the other divisions of the department. Copies of reports on all specimens which are positive, indicating the existence of communicable diseases, are sent to the chief of the Division of Communicable

Diseases and to the district health officer within whose jurisdiction the patient resides. Copies of all positive reports in cases of venereal diseases are likewise sent to the chief of the Division of Social Hygiene. Through the Division of Tuberculosis constant touch is maintained with many of the tuberculosis clinics in the State, and these are kept supplied with mailing containers for the transmission of sputum. The Division of Sanitary Engineering, through its engineering laboratory, is in very close touch with the Division of Diagnostic Laboratories at all times.

FUTURE DEVELOPMENTS

The Division of Diagnostic Laboratories and the Division of Biological and Research Laboratories stand at the very threshold of their possible usefulness to the physicians and the people of the State. The foundation has been intelligently and firmly laid and upon it a structure of unlimited proportions may be built with unquestioned efficiency and economy.

During the coming year it is hoped that certain very essential objects may be attained which will make for the material betterment of the service. First among these is the establishment of the Biological and Research Laboratories in new and modern quarters, making it possible to produce vaccine virus for the immunization of smallpox; typhoid vaccine, pneumococcus vaccine, and diphtheria antitoxin for use in connection with the Schick test to determine immunity to diphtheria.

The quarters now assigned to the diagnostic laboratories are altogether inadequate to meet the growing needs of the State while the location of the diagnostic laboratories within the new quarters of the Biological and Research Laboratories would prove so inconvenient as to be entirely impracticable.

More room must be obtained in the State House or in the central portion of Springfield for bacteriological and serological procedures and for the establishment of routine examination of pathological specimens for which there is a large and growing demand.

The branch laboratories can be made of much more value than at present, and can relieve the pressure upon the Central Diagnostic Laboratories by the appropriation of sufficient funds to permit extension of service to include the examination of specimens from suspected cases of typhoid fever, pneumonia and meningitis, in addition to the diphtheria work which is now carried out.

It is desirable that the work in the branch laboratories be done on a salary rather than a piece work basis, and it is also desirable that there shall be established more branch laboratories, especially in the extreme southern and the extreme northern sections of the State.

DIVISION OF LODGING HOUSE INSPECTION

WILLIAM W. McCULLOCH, *Superintendent*

The Division of Lodging House Inspection of the State Department of Health is charged with the supervision of certain sanitary features of lodging houses, boarding houses, taverns, inns and hotels in cities of 100,000 population or over. On account of this limitation as to population the activities of the division have been confined to the city of Chicago where an office is maintained at 130 North Wells Street.

INSPECTIONS

During the fiscal year ending June 30, 1920, 443 lodging houses, boarding houses, taverns, inns and hotels were measured and 278 re-measured. At the time of inspection there were 10,805 lodgers in these lodging houses which contained a total of 14,495 rooms. The legal capacity of these lodging houses was 34,544.

The following table (Table XXII) shows the total number of inspections made during the fiscal year with the number of rooms, the number of lodgers occupying the quarters and the present legal capacity:

TABLE XXII.

	Supplemental inspections.	Rooms.	Lodgers.	Present capacity.
1919				
July.....	398	8,788	5,892	12,078
August.....	519	15,160	10,714	20,963
September.....	408	11,454	8,543	14,442
October.....	385	21,144	8,634	14,530
November.....	285	5,084	3,612	6,490
December.....	393	12,510	9,802	16,010
1920				
January.....	4	60	48	81
February.....	42	988	748	1,142
March.....	85	2,181	2,056	3,537
April.....	3	82	80	104
May.....	56	961	648	1,319
June.....	170	3,896	2,928	5,082
Total.....	2,748	82,308	53,705	96,078

During the year 226 premises previously occupied as lodging houses, were found to be vacant, 151 were occupied by other lines of business, and 36 were torn down.

During the months of January and February, 1920, all of the inspectors were assigned to the duty of serving notices on proprietors and

managers of lodging houses, boarding houses, taverns, inns and hotels, to file the sworn statement required by the State Department of Health Act and the Civil Administrative Code by March first of each year. The inspectors served 5,940 such notices upon proprietors and managers and reported the number of lodgers to be 109,694.

The proprietors and managers of lodging houses, boarding houses, taverns, inns and hotels, who failed to file a sworn statement with the county clerk on March 1, were served with a written notice directing them to file their statement within three days from date of service. During March, April and May, the inspectors served 2,439 of these second notices on proprietors and managers of houses in which there were 30,275 lodgers.

During February, March and May the inspectors were assigned part of the time to work in the office of the division and in the office of the county clerk, in connection with the filing of sworn statements, and making copies thereof for the department, as provided in the rules and regulations of the State Department of Health. The number of sworn statements filed with the county clerk for the year 1920 is 5,120, all of which have been copied by the inspectors and preserved in book form.

VIOLATIONS

From July 1, 1919, to June 30, 1920, 385 violations of the public health laws relative to lodging houses and boarding houses, have been reported. In each case, a written notice was served upon the proprietor or manager directing that objectionable conditions be corrected within a definite period of time, which in no instance exceeded ten days. At the expiration of the time given, reinspections were made and in all instances it was found that the orders had been complied with.

EDUCATIONAL SERVICE

During February, 1920, when influenza was prevalent in epidemic form, the inspectors of the division made a survey of sickness conditions in the lodging houses of the city of Chicago, reporting daily to the Commissioner of Health and mailing duplicate copies of reports to the State Department of Health at Springfield. These reports gave the name of the person afflicted, with his address and also gave the name of the disease, and whenever possible, the name of the attending physician. During the period from February 5 to February 18, inspectors located forty seriously sick persons in the lodging houses of the city, nineteen of whom were suffering from influenza, nineteen from pneumonia and two from active tuberculosis.

DIVISION OF PUBLIC HEALTH INSTRUCTION

SAMUEL W. KESSINGER, *Acting Chief*

At the end of the third year the Division of Public Health Instruction, while strictly speaking in its formative period, seems to have struck its stride and is now fully demonstrating the wisdom of its creation.

The routine duties of the division, such as the issuance of the Illinois Health News, and bulletins from time to time concerning the various diseases which threaten the public health, have heretofore been so fully set forth that little remains to be added for the information of the public.

EDUCATIONAL ACTIVITIES

As new phases of child welfare work are developed complete information in pamphlet form is prepared for distribution by this division. This is also true of the progress made by each of the divisions comprising the State Department of Health.

With the steady increase in the number of clinics throughout the State for crippled children and those for the treatment of tuberculosis and social diseases, there has arisen a steady and constantly increasing demand for authentic information. This demand is being met as rapidly as the specialists in charge of the work of the several divisions of the department can prepare and turn it over to the Division of Public Health Instruction for printing and distribution.

There has been a general awakening of the public along the line of welfare work and health promotion. Extra-governmental health movements are being organized in many communities, calling for the active cooperation of the Division of Public Health Instruction in the matter of furnishing literature and speakers for their health programs.

During the past year the news service of this division has been systematized with most gratifying results. It has been the object of the division to place genuine health news concerning the activities of the State Department of Health and of the various communities of the State before the people in the shortest and most readable style. The newspapers of the State are to be congratulated for their hearty cooperation in this campaign for better health in Illinois. Without that cooperation but little could have been accomplished. With it, there is no doubt but that Illinois will stand first among the states of the Union in net results along the lines of health promotion and disease prevention.

HEALTH PROMOTION WEEK

On March 26 and 27, 1919, the House and Senate, respectively, Fifty-first Illinois General Assembly, passed a joint resolution designating the weeks beginning on the second Sunday in the month of May, 1919 and 1920, as Health Promotion Weeks throughout the State. The State Department of Health was designated as the agency through which the activities of the weeks should be carried out. A vast amount of organization work was done in the campaign of 1919 involving an expenditure of more than \$8,000. The history of that campaign was written into the second annual report of the Division of Public Health Instruction.

Calling on the organizations effected in 1919 by means of the press service and without the expenditure of any funds beyond the average current expenses, the Health Promotion Week of 1920 was carried out generally throughout the State in a manner most gratifying to all concerned. Physicians, school authorities, the press, the pulpit and the general public cooperated to make the week a grand success. The press generally has taken up the idea and is calling for a continuous "keep clean" campaign instead of a once-a-year clean-up.

For the further information of the public the activities of the Division of Public Health Instruction are given under the heading:

EXHIBITS AND SPEAKERS

During the past few years the Department of Public Health has developed a very extensive and complete collection of exhibit material, consisting of a large mechanical exhibit, motion picture films, lectures illustrated by stereoptican slides and colored posters dealing with all phases of public health.

The mechanical exhibit accompanied by an experienced operator has been shown at seven county fairs during the year. Slides and lectures were sent to twelve high schools and woman's clubs. The motion picture films and the colored posters were in constant use, the films being sent to 35 communities and parcel post packages of the posters to 22 communities.

Fifty-five of the cartoon cuts which are used for the covers of the monthly publication, "Illinois Health News," were loaned for use in publications throughout this and neighboring states.

The motion picture films and the subjects treated are as follows:

The Rat Menace.—This film was prepared with a view to educating the public to the importance of getting rid of the rat, and shows the great harm done by this pest and ways to eradicate it. It is a convincing argument for the extermination of the rat.

An Equal Chance.—The public health nurse and her work are presented in this film, and answers are given to the questions, "What is a Public Health Nurse? Whom does she serve and how? Why is she one of Society's Indispensables?" Besides the demonstrations of bedside care, home instruction and country school nursing which are woven into the body of the story, accurate representations of various other branches

of public health nursing such as maternity care, infant welfare and tuberculosis are included without breaking the thread of the dramatic narrative.

The Priceless Gift of Health.—The story illustrated in this picture is one of the "child welfare" variety, showing the career of two boys, cousins, one of whom grew up under hygienic conditions to healthy manhood, while the other boy, whose mother thought "any milk was good enough so long as it was cheap," allowed him to grow up improperly cared for with the result that he was unfitted for life's work.

The Great Truth.—The ravages of consumption and the possibility of its cure are graphically and dramatically portrayed.

Tommy's Birth Certificate.—An educational picture of human interest to impress upon the public the importance and necessity of recording births, setting forth the embarrassments and misfortunes that may beset any individual whose birth has not been recorded.

Summer Babies.—The proper care of babies in summer time and the work of the child welfare nurse is presented.

The Fly Danger.—A valuable contribution to education in public hygiene by showing the part that flies play in the spreading of disease. This subject is full of human interest and action and is within the understanding of the child as well as the adult.

The Fly Pest.—This portrays the modes and methods of infection by flies.

Health Promotion Week Parade.—A short film showing the parade of school children and health organizations in the city of Springfield during the 1919 Health Promotion Week.

The chiefs of the several divisions of the department are usually available for public lectures on their individual lines of activity and this service has been very much in demand by clubs, societies, colleges and high schools. Representatives of the department have also appeared before various medical and scientific bodies for the purpose of presenting papers or of giving clinical instruction.

DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D., *Chief*

In an effort to control, suppress and eradicate venereal diseases, the alarming prevalence of which was demonstrated during the physical examination of men called for military duty under the Selective Service Act, the Division of Social Hygiene was created within the Department of Public Health on July 1, 1918. The Chamberlain-Kahn amendment to the Army Appropriation Bill passed by the Sixty-fifth Congress appropriated the sum of \$2,000,000 for the assistance of states in the control of venereal diseases for the two years ending June 30, 1920. This money was divided according to population among the states creating special divisions for the control of venereal diseases and adopting laws or enacting legislation requiring that these diseases be reported.

For the year ending June 30, 1919, the sum of \$66,307.51 was made available from this Government appropriation. The second year's allotment was conditioned upon an appropriation by the State legislature to be matched dollar for dollar with a like amount of Federal funds. The Fifty-first General Assembly appropriated for the use of the Division of Social Hygiene the sum of \$100,000 for the two years ending June 30, 1921. This was matched by an allotment of \$50,000 for the second year's work from the Federal Government, so that there was available for the year ending June 30, 1920, the sum of \$100,000.

The work of the division has proceeded along lines established during the first year, conforming, in general, to the venereal disease program suggested by the Interdepartmental Social Hygiene Board, which board was created by act of Congress to administer funds appropriated for venereal disease control. A study of the venereal disease situation has demonstrated that these diseases are, in fact, the most prevalent of all infectious diseases and are responsible for more human suffering and more expense to Government, states and counties than any other class of infectious diseases.

Regulations for the control of venereal diseases adopted by the Department of Public Health declare venereal diseases, namely, syphilis, gonorrhea and chancroid, to be contagious, infectious, communicable and dangerous to public health. The regulations differ from those in force against other infectious diseases in that the venereally infected person under treatment by a licensed physician is reported in such a manner that his name is not revealed so long as he respects the requirements of the regulations, (continuing under treatment until cured of his infec-

tiousness and refraining from exposing others to infection). The regulations require the treatment by counties of persons unable to pay for medical attention. They provide for isolation and quarantine where such extreme measures are necessary to control the patient.

During the year ending June 30, 1920, a total of 31,876 cases were reported by clinics, physicians and druggists. It is estimated that this represents less than 25 per cent of the number of venereally infected persons in the State of Illinois. It has not been the policy of the Division of Social Hygiene up to the present time to urge the prosecution of physicians and others for failure to report, it having been considered advisable to first disseminate information to the general public concerning the serious character of these diseases and their far-reaching after-effects. Unless the source of infection is named, the value of reports is, in a large measure, lost, and, in order that this information may be forthcoming, the voluntary or willing cooperation of the physician is necessary. Wholesale prosecution of physicians for failure to report would doubtless result in many more reports but in much less information concerning sources of infection, and, in the end, little would be accomplished.

Gonorrheal infection causes blindness in infants. Syphilis causes locomotor ataxia and paresis. It is frequently the cause of feeble-mindedness in children. It is conservatively estimated that 20 per cent of the inmates of State charitable institutions are in their present condition as a result of a venereal disease contracted or inherited. From an economic standpoint alone, the control of venereal diseases is justifiable.

The activities of the Division of Social Hygiene are divided into:

1. The treatment of disease carriers.
2. Repressive measures.
3. Educational measures.

and this report is divided under these general heads.

TREATMENT

Because of the lack of proper information concerning the serious character of and the ravages wrought by venereal diseases less than 50 per cent of venereally infected persons have been receiving proper treatment at the hands of competent medical men. The average physician, because of a disinclination toward this class of work, or because of the lack of time to give proper treatment, is reluctant to treat patients infected with venereal disease. The services of a specialist are beyond the means of many patients suffering with venereal disease, consequently some provision must be made for the treatment of a large number of patients who cannot provide it for themselves or who are attempting to treat themselves with patent medicines or with prescriptions passed from one to another. Rule 16 of the department regulations for the control of venereal diseases provides as follows:

Upon being advised of a case of venereal disease in any person who is unable to pay for the necessary medicines, medical attention or hospital care, local health authorities shall report the case to the overseer of the poor, who shall supply such medicine, medical attention and hospital care.

In the larger cities it has been found economical and more satisfactory to establish clinics for the treatment of such patients. At the close of the year 1919 clinics were in operation in the following cities: East St. Louis, Rockford, Decatur, Springfield and two in Chicago. During the year ending June 30, 1920, additional clinics have been established in the following cities: Alton, Cairo, Carlinville, Chicago Heights, Litchfield, Moline, Peoria, Rock Island, Waukegan, West Hammond and five in Chicago. With the exception of Rock Island and those in Chicago, the Division of Social Hygiene has provided equipment for all these clinics. Clinical equipment remains the property of the Department of Public Health and is loaned to the various clinics under a contract which provides that the Division of Social Hygiene shall have general supervision over clinics and that no change in management or policy shall be made without the consent of the division. The operating expense of clinics is borne jointly by the Division of Social Hygiene and the communities in which clinics are located. In most instances the local expense is cared for by the city and county jointly or by voluntary contribution made by individuals and industries. In the case of the Rock Island clinic, equipment was provided by the Rock Island County Board of Supervisors and the operating expense is borne by the board, a monthly subsidy being paid by the division. Chicago clinics have been equipped by the Chicago City Health Department, which department also provides quarters. A monthly subsidy is paid each of them by the Division of Social Hygiene.

It is the policy of the Division of Social Hygiene to operate clinics in such a manner as to not pauperize the public or infringe upon the legitimate practice of any physician.

The following is a brief summary of the activities of clinics during the year ending June 30, 1920:

CLINIC SUMMARY

	Male.	Female.
Patients hospitalized	908	452
Number patients discharged	1,561	1,063
Number patients discontinuing treatment	2,500	796
Number patients placed in detention	40	20
<hr/>		<hr/>
Total number cases of disease treated		30,005
Total number of patients treated		28,984
Total number treatments administered (including arsphenamine)		98,754
Number Wassermann tests		13,090
Number of microscopic examinations for the treponema pallidum		873
Number of microscopic examinations for the gonococcus		8,732
Number of doses of arsphenamine administered		16,819

During the year ending July 1, 1920, 12,797 ampules of arsphenamine, the drug used in the treatment of syphilis, have been distributed to clinics; 734 ampules to overseers of the poor; and 952 ampules to

physicians for the treatment of patients who were unable to obtain the drug but who had made a satisfactory arrangement to compensate the physician for administering it.

The following is a tabulation of venereal diseases reported to the Illinois Department of Public Health for the year ending June 30, 1920:

REPORTED CASES OF VENEREAL DISEASES

Age:		Jail	30	
1-12.		Elsewhere	211	6,910
12-16.				
16-20.		Source of Infection:		
20-30.		Inherited	63	
30-40.		Contracted	942	
40-50.		Investigated	729	1,734
50 and over.				
Sex:		Stage:		
Male	5,429	Primary or acute.....	3,888	
Female	1,481	Secondary or subacute..	1,354	
	6,910	Tertiary or chronic.....	1,668	6,910
Color:		Social Status:		
White	6,182	Single	4,290	
Black	728	Married	2,073	
	6,910	Widowed	325	
Occupation:		Divorced	222	6,910
Clerk	569	Place:		
Chauffeur	106	City	5,728	
Cook or waiter.....	148	Town	1,182	6,910
Laborer	2,554	Laboratory Findings:		
Idle	1,067	Positive	4,943	6,910
Farmer	329	Negative	237	
Stenographer	35	None	1,730	6,910
Miscellaneous	1,905			
	6,910	Patients under treatment.....	6,910	
Residence:		Handling foodstuffs	333	
Home	4,779	Discontinued employment	370	
Boarding house	1,454			
Hotel	230			
Hospital	67			
Institution	139			

Number complete reports received from physicians, from which above tabulation was made..... 6,910

Number incomplete reports received from physicians, druggists, State institutions, clinics, and the Chicago City Health Department..... 24,966

Total cases reported for the year ending June 30, 1920..... 31,876

Total cases reported for the year ending June 30, 1919..... 16,915

Increase

By correspondence with physicians, by personal interviews and by talks to county medical societies, representatives of the division are constantly endeavoring to secure the voluntary cooperation of physicians in reporting, and reports are being received in constantly increasing numbers. Physicians are coming to realize that a license to practice medicine conferred by the State carries with it an obligation which can be best discharged by contributing in every possible way toward the protection of the public health, and in order that the public health may be conserved, communicable diseases must be promptly reported to health officials.

REPRESSING ACTIVITIES

It will be admitted that to prevent the spread of venereal disease, two things must be accomplished, that is, the cure or rendering noninfectious of every carrier and the prevention of contact between healthy

and diseased persons. Jurisdiction of public health departments in striving to accomplish the first proposition will not be questioned. In an attempt to prevent the contact between healthy and diseased persons, considerable opposition is met.

It will also be admitted that there is not a more certain and successful method of preventing the spread of syphilis and gonorrhea than by minimizing the opportunity of exposure to these diseases. Public prostitution is admittedly the most prolific source of venereal disease since reliable data gathered in every community demonstrates without possibility of refuting that a high percentage of all prostitutes are infected with syphilis or gonorrhea or with both. It would seem to be a matter of extreme importance to health officers to prevent this disease spreading business. Laws and ordinances against prostitution, professional and clandestine, have been on the statute books for years. They were placed there in compliance with public opinion and by duly constituted legislative bodies. These laws should receive the same respect from officers who have sworn to obey the law as do laws for the protection of person and of private property. Until the law is changed or repealed, all citizens have a right to demand that laws directed against prostitution be rigidly enforced.

Cooperation of city and county officials is essential to the complete success of venereal disease control. Such cooperation was readily obtained while the country was at war because the elimination of venereal disease was looked upon as a patriotic measure. With the return of peace there has been a regrettable tendency on the part of many civil officials to relapse into their former state of disregard concerning the apprehension of disease spreading prostitutes. Since venereal diseases are far more dangerous and far more destructive than any other of the much feared contagious diseases, it would seem that public health officials and officials generally should be as energetic in their efforts to suppress the venereal disease carrier as they are in suppressing carriers of such diseases as smallpox, diphtheria and scarlatina.

During the past year the division has attempted to keep alive the interest of civil officials and the general public in the repression of commercialized vice but has encountered a feeling of indifference, no doubt due to a reaction which was to be expected following the strenuous activities occasioned by the World War. Officers of the division have made numerous investigations into vice conditions in all parts of the State and these conditions have been materially improved. In the absence of direct legislation requiring medical examination of all persons arrested under conditions rendering them venereal disease suspects, and because of the inertia manifested by some part-time local health officials who are inadequately compensated for their services, many disease spreaders escape. Because of the inactivity of local health authorities, it has been

necessary to send investigators from the division to all parts of the State to follow-up and get under treatment reported sources of infection.

OPHTHALMIA NEONATORUM

Since ophthalmia neonatorum, commonly known as infants' sore eyes, is in nearly all cases the result of gonorrheal infection contracted at the time of birth, investigation of such cases properly becomes the work of the Division of Social Hygiene.

An Act for the prevention of blindness from ophthalmia neonatorum, approved June 24, 1915, renders the reporting of such cases by physicians and midwives obligatory. In accordance with the provisions of this act, the State Department of Public Health provides a prophylactic solution, which, if timely used, will in almost all cases prevent this disease.

During the past year five midwives and three physicians have been prosecuted under the Ophthalmia Neonatorum Act, all having been convicted.

EDUCATIONAL WORK

Before the institution of the venereal disease campaign, no attempt had ever been made to give the public reliable information concerning sex hygiene. In the teaching of modern physiology in public schools and high schools, little, if any, consideration is given to the physiology of the sex organs, consequently the youth of the country have been depending upon such information as they could get from their parents. On account of the natural embarrassment which has always accompanied any mention of facts bearing upon the sex relation, and because of ignorance concerning the proper method of transmitting such information to children without creating an abnormal curiosity, sex education has been sadly neglected.

The Division of Social Hygiene has had neither authority nor desire to introduce sex education into public schools. Not every teacher can impart such instruction successfully and it is believed that a capable instructor in sex hygiene must be equipped by nature as well as by training. Lectures on the subject of sex hygiene and venereal diseases have been delivered to the general public, to teachers at their quarterly institutes, to segregated audiences of men and women employed in industries and in offices; to students in commercial colleges, in literary colleges and in military schools. These lectures have been illustrated by motion picture films depicting the effects of venereal disease and an audience of from two thousand to twenty-five hundred is not uncommon.

Placards giving information concerning venereal diseases have been posted in railway station toilets, in railway cars, in comfort stations, hotel and theatre wash rooms and in the wash rooms of large industrial plants and office buildings.

